

~~CONFIDENTIAL~~

Release Date 3-1-72

W

Black Rock?

COUNTY Apache AREA 50 mi W of Shiprock N.M. LEASE NO. Navajo 14-20-0603-1522

Hatten SW S. Husker E 1/4 7-11-73 monarto Black Rock #1  
WELL NAME CITIES SERVICE OIL # 1 Navajo-A

LOCATION SE.NE SEC 21 TWP 40N RANGE 29E FOOTAGE 1980-FNL - 1050 FEL

ELEV 6383' GR KB SPUD DATE 6-30-71 STATUS Gas Well TOTAL 6111  
COMP. DATE 9-14-71 DEPTH 5985

CONTRACTOR Loffland Bros.

CASING SIZE	DEPTH	CEMENT	LINER SIZE & DEPTH	DRILLED BY ROTARY	X
9 5/8"	912	Circ.		DRILLED BY CABLE TOOL	
7"	6111	375 sx		PRODUCTIVE RESERVOIR	<u>Penn.</u>
2 3/8" Tbg.	5531	Packer @ 5522		INITIAL PRODUCTION	<u>7.4 MMCFD-AOF</u> <u>2 bbls condensate</u>

FORMATION TOPS	DEPTHS	SOURCE		REMARKS
		L.L.	E.L.	
DeChelly	2738			
Organ Rock	3102			
Cutler	3691			
Hermosa	4442			
Ismay	5036			
Desert Crk	5178			
Akah	5322			
Barker Crk	5478			
Molas	5779			
Miss Lime	5870			
Miss. Dolomite	5940			

Plugged back & re completed  
6-21-74

ELECTRIC LOGS	PERFORATED INTERVALS	PROD. INTERVALS	SAMPLE LOG	Am Strat
BHC-Sonic, G.R.,	5553-57, 73, 74, 75,	5553-5577	SAMPLE DESCRP.	
Perf. Depth Control,	76, 77--5654, 55, 56,	5464-5660	SAMPLE NO.	<u>1678</u>
Dual Ind-Laterolog,	57, 58, 59, 60		CORE ANALYSIS	
Proximity	1 hole per. ft.		DSTs	<u>5</u>

REMARKS THIS WELL DRILLED ON UNORTHODOX LOCATION FOR GAS WELL.

MAY NOT PRODUCE UNTIL APPROVED AT PUBLIC HEARING.

(American-Fuels-Operator of this well)

APP. TO PLUG

PLUGGING REP.

COMP. REPORT X

WATER WELL ACCEPTED BY

Chuska Energy Co. / Valley National Bank 4-11-73 E.D. # 2578904  
BOND CO. General Insurance Company of America BOND NO. 60338-165

BOND AMT. \$ 25,000 CANCELLED 11-12-86 DATE  (latest)

FILING RECEIPT 2893 LOC. PLAT X WELL BOOK X PLAT BOOK X

API NO. 02-001-20145 DATE ISSUED 6-21-71 DEDICATION S/2 NE/4

ORGANIZATION REPORT 4-26-74 on file

PERMIT NUMBER 559

NO.	FROM	TO	RESULTS For details see file
1	5060	5107	Rec. 1 bbl. gas cut drlg. mud w/ rainbow of oil
2	5195	5221	Rec. 30 gas cut drlg. mud w/rainbow
3	5250	5375	Gas to surface 25 mi. Rec 300' 41° gravity oil
4	5545	5670	Flowed gas at rate of 5.945 MMCFD
5	5948	6000	Rec 5' drlg mud.

NO.	FROM	TO	RECOVERY	REMARKS
				None reported

DATE STARTED - COMPLETED		WORK PERFORMED	NEW PERFORATIONS

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Form 3160-5  
(June 1990)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well  
☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Harken Southwest Corporation

3. Address and Telephone No.

P. O. Box 612007, Dallas, TX 75261

214/753-6900

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 21-40N-29E  
1980' FNL & 1050' FEL

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

5. Lease Designation and Serial No.

NOG 8707-1139

6. If Indian, Allottee or Tribe Name

Navajo Tribal

7. If Unit or CA, Agreement Designation

Permit 559

8. Well Name and No.

Black Rock #1

9. API Well No.

02-001-20145

10. Field and Pool, or Exploratory Area

Black Rock (Paradox)

11. County or Parish, State

Apache Co., AZ

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment	<input type="checkbox"/> Change of Plans
<input checked="" type="checkbox"/> Subsequent Report	<input checked="" type="checkbox"/> Recompletion	<input type="checkbox"/> New Construction
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Altering Casing	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Other	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

The subject well was plugged back/recompleted in the Paradox formation on 6/21/94 as per the attached downhole schematic.

After the tbg & packer were set the wellbore was perforated as follows:  
5461, 5360, 5350, 5299, 5211, 5204, 5201, 5198, 5174, 5164,  
5162, 5154, 5101, 5099-97, 5065, 4846 & 4844.

An acid frac was performed on the perforations with:  
1,200 gal preflush  
15,000 gal gel  
12,000 gal 20% HCl  
4,000 gal flush

14. I hereby certify that the foregoing is true and correct

Signed

(This space for Federal or State office use)

Title Production Administrator

Date 7/20/95

Approved by  
Conditions of approval, if any:

Title

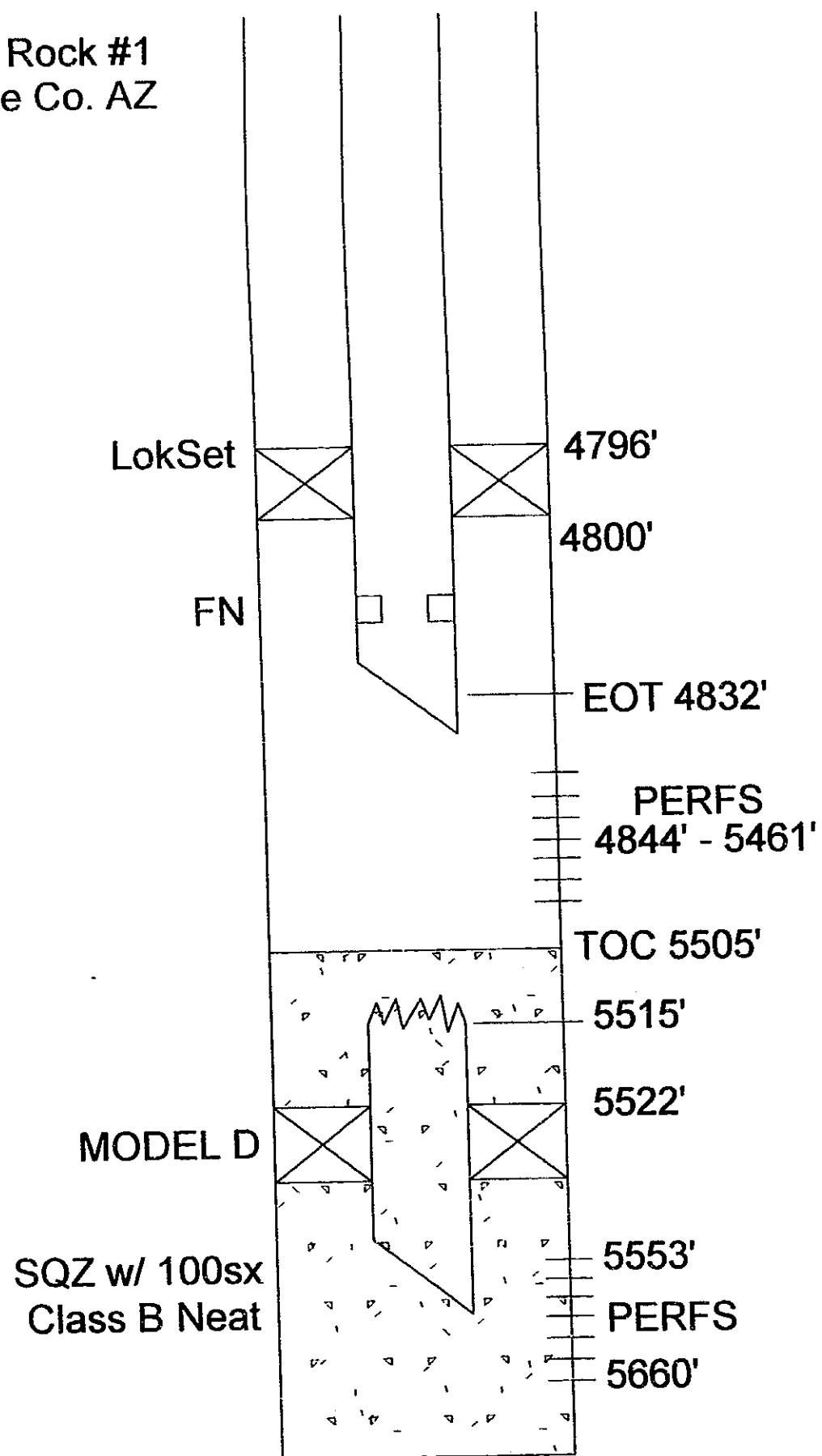
Date

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*See Instruction on Reverse Side

JUL 24 1995

Black Rock #1  
Apache Co. AZ



P/N 559

JUL 24 1995

NAVAJO TRIBAL CONTRACT

WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

DESIGNATE TYPE OF COMPLETION:

New Well ☒ Work-Over ☐ Deepen ☐ Plug Back ☐ Same Reservoir ☐ Different Reservoir ☐ Oil ☐ Gas ☒ Dry ☐

DESCRIPTION OF WELL AND LEASE

Operator: CITIES SERVICE OIL COMPANY Address: P.O. BOX 69, HOBBS, NEW MEXICO 88240

Federal, State or Indian Lease Number or name of lessor if fee lease: Navajo #03-2390-01 Monsanto-Navajo "A" Well Number: 1 Field & Reservoir: Wildcat

Location: 1980 FNL & 1050 FEL County: Apache

Sec. TWP-Range or Block & Survey: Sec. 21-T40N-R29E

Date spudded: 6-30-71 Date total depth reached: 7-29-71 Date completed, ready to produce: 8-29-71 Elevation (DF, REB, RT or Gr.) feet: 6383 GR Elevation of casing hd. flange feet: 6383

Total depth: 6111 P.B.T.D.: 5985 Single, dual or triple completion?: Single If this is a dual or triple completion, furnish separate report for each completion.

Producing interval (s) for this completion: (5553-5577) (5653-5660) Rotary tools used (interval): 0--6111 Cable tools used (interval): None

Was this well directionally drilled?: No Was directional survey made?: No Was copy of directional survey filed?: -- Date filed: --

Type of electrical or other logs run (check logs filed with the commission): Borehole Comp. Sonic Log Gamma Ray, Perf Depth Control, Dual Induction-Laterlog, Proximity Log-Microlog Date filed: 9-7-71

CASING RECORD

Purpose	Size hole drilled	Size casing set	Weight (lb./ft.)	Depth set	Sacks cement	Amt. pulled
Surface	12 1/4"	9 5/8"	32.3#	912	Circulated	None
Producing	8 3/4"	7"	23# & 26#	6111	375	None

TUBING RECORD

Size	Depth set	Packer set at	Size	Top	Bottom	Sacks cement	Screen (ft.)
2 3/8 in.	5531 ft.	5522 ft.	7" in.	-- ft.	-- ft.	--	--

PERFORATION RECORD

Number per ft.	Size & type	Depth Interval	Amt. & kind of material used	Depth Interval
One	1 1/2" Jet	5553, 57, 73, 74, 75, 76, 77	6000 gal 15% HCL	5553-5557
One	1 1/2" Jet	5654, 55, 56, 57, 58, 59, 60	10000 gal 28% HCL	

INITIAL PRODUCTION

Date of first production: 8-27-71 Producing method (indicate if flowing, gas lift or pumping--if pumping, show size & type of pump): Flowing

Date of test: 8-27-71 Hrs. tested: 10 Choke size: 2 Oil prod. during test: 2 bbls. Gas prod. during test: MCF Water prod. during test: bbls. Oil gravity: 52 ° API (Corr)

Tubing pressure: -- Casing pressure: -- Cal'd rate of Production per 24 hrs.: 2 Oil: 2 bbls. Gas: 7.4 MMCF Water: -- bbls. Gas-oil ratio: --

Disposition of gas (state whether vented, used for fuel or sold): Well shut in waiting for pipeline connection.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Representative of the CITIES SERVICE OIL COMPANY (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date: September 14, 1971 Signature: C. D. Robertson District Adm. Supervisor

RECEIVED

SEP 20 1971

Permit No. 559 O & G CONS. COMM. Form No. 4 STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION Well Completion or Recompletion Report and Well Log File One Copy

# **DETAIL OF FORMATIONS PENETRATED**

Formation	Top	Bottom	Description*
Akah Lime	5060	5107	<u>DST #1.</u> No water cushion. 5/8" bottom choke. Opened for 15 min preflow, strong blow gas in 5 min. Closed for 90 min. Opened tool for 90 min flow period. Flowed gas at rate of 318 MCFD on 5/8" choke w/25 psi flow pressure. Closed tool for 90 min FSIP. Recovered one bbl. gas cut drilling mud w/rainbow of oil in drill pipe. Pressure on 15 min preflow 53# to 107#. ISIP 1418 (90 min). IFP 80#, FFP 80# (90 min), FSIP 615 (90 min), BHT 115° MCP (in & out) 2462.
Barker Creek	5195	5221	<u>DST #2.</u> No water cushion, 3/4" bottom choke, 5/8" top choke. Tool opened for 15 min preflow with weak blow. Shut in for 90 min ISIP, then opened well for 60 min flow period. Weak blow throughout test. No surface pressure. Shut in for 60 min FSIP. Recovered 30 <sup>1</sup> gas cut mud w/slight rainbow of oil. Preflow 53 psi, 90 min ISIP 373 psi, IF 53 psi, FF 53 psi, 60 min FSIP 320 psi, MCP in & out 2489 psi, BHT 108° F.
Atoka	5250	5375	<u>DST #3.</u> No water cushion, 3/4" bottom choke, 5/8" top choke. Tool opened for 15 min preflow w/weak blow. Closed for 90 min ISIP. Re-opened for 90 min flow period. Gas to surface in 25 min. w/good blow decreasing to weak blow. No surface pressure. Closed tool for 90 min FSIP, recovered 300 <sup>1</sup> of 41 gravity oil and 300 <sup>1</sup> of heavy oil and gas cut drilling mud. 15 min preflow 80 psi -- 107 psi; 90 min ISIP 2301 psi (incorrect); IF 134 psi; FF 214 psi; 90 min FSIP 1086 psi, MCP (in & out) 2516 psi, BHT 120° F.
L. Pinkerton Trail	5545	5670	<u>DST #4.</u> No water cushion, 3/4" bottom choke, 3/4" top choke, opened tool for 15 min preflow, flowed with strong blow. Gas to surface in 4 minutes. Closed tool for 90 min ISIP. Re-opened with strong blow increasing to 550 psi max. surface pressure on 3/4" choke, decreasing to 410 psi at conclusion of test. Gas rate 5.945 MMCFD. Closed tool for 90 min FSIP. Recovered 300 <sup>1</sup> of heavy gas cut mud w/trace of condensate. 15 min preflow 535 psi --562 psi; 90 min ISIP 1525 psi, IF 481 psi, FF 669 psi, 90 min FSIP 1499 psi, BHT 120° F. MCP (in & out) 2651 psi.
Upper-Miss	5948	6000	<u>DST #5.</u> No water cushion, 3/4" bottom choke, 3/4" top choke. Opened tool for 15 min preflow. No blow. Closed tool for 60 min ISIP. Re-opened for 60 min flow period. No blow. Closed tool for 60 min FSIP. Recovered 5 <sup>1</sup> of drilling mud. 15 min preflow 53 psi--133 psi; 60 min ISIP 1379 psi, IF 53 psi, FF 80 psi, 60 min FSIP 347 psi, MCP in 2992 psi, MCP out 2886 psi, BHT 132° F.

\* Show all important zones of porosity, detail of all cores, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

## **INSTRUCTIONS:**

Attach drillers log or other acceptable log of well.

This Well Completion or Recompletion report and well log shall be filed with the State of Arizona Oil & Gas Conservation Commission not later than thirty days after project completion.

Form No. 4

# SUNDY NOTICES AND REPORTS ON WELLS

1. Name of Operator Harken Southwest Corporation  
 2. OIL WELL ☐ GAS WELL ☒ OTHER ☐ (Specify) \_\_\_\_\_  
 3. Well Name Black Rock 1  
 Location 980' FNL & 1050' FEL  
 Sec. 21 Twp. 40N Rgn. 29E County Apache, Arizona.  
 4. Federal, State or Indian Lease Number, or lessor's name if fee lease NOG 8702-1116  
Navajo Tribal Lease  
 5. Field or Pool Name \_\_\_\_\_

8. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT OFF <input type="checkbox"/>	MONTHLY PROGRESS <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	DIRECTIONAL DRILL <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	PERFORATE CASING <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(OTHER) <u>Workover</u>	ABANDONMENT <input type="checkbox"/>

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Attached for your records please find BLM approved procedure to workover the subject well.



8. I hereby certify that the foregoing is true and correct.

Signed

Rachelle Montgomery  
 Rachelle Montgomery

Title Production Administrator

6/24/94

Permit No. 559

STATE OF ARIZONA  
 OIL & GAS CONSERVATION COMMISSION  
 Sundry Notices and Reports On Wells  
 Form No. 25  
 File One Copy



Form 3160-5  
(June 1990)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well  
☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator  
Harken Southwest Corporation

3. Address and Telephone No.  
501 Airport Drive, #158 Farmington, NM 87401 (505) 327-5531

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
1980' FNL - 1050' FEL  
Sec. 21, T40N, R29E

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

5. Lease Designation and Serial No.  
NOG8702-1116

6. If Indian, Allottee or Tribe Name

Navajo Tribal

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Black Rock 1

9. API Well No.

1

10. Field and Pool, or Exploratory Area

Black Rock 1

11. County or Parish, State

Apache County, Arizona

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Subsequent Report	<input checked="" type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input checked="" type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input type="checkbox"/> Other
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

*We recommend to plug back and recomplete as per enclosed procedure. (See step 16)*



14. I hereby certify that the foregoing is true and correct

Signed

Shelma Johnson

Title

Production Technician

Date

6-10-94

(This space for Federal or State office use)

Approved by

Title

Date

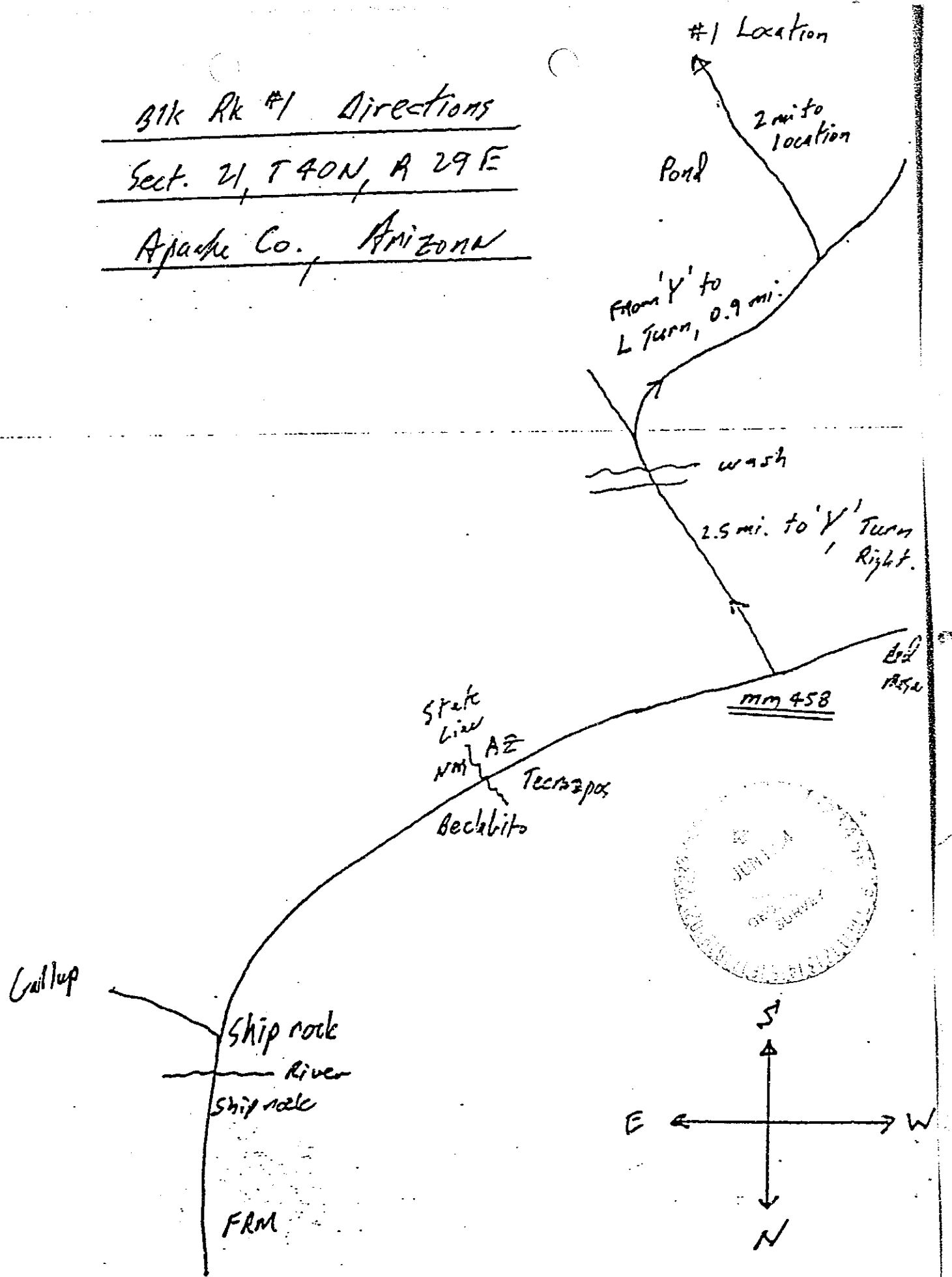
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*See instruction on Reverse Side

Operator

Blk Rk #1 Directions  
Sect. 21, T40N, R29E  
Apache Co., Arizona



**BLACK ROCK #1**  
**Black Rock Field, Apache County, AZ**  
**RECOMPLETION PROCEDURE**  
**4-5-94**

**WELL NAME:** Black Rock 1-21-40N29E No. 1  
**LOCATION:** Section 21, Township 40N, Range 29E  
 1980' FNL, 1050' FEL  
**LEASE NO:** NOG 8702-1116  
**COUNTY/STATE:** Apache Co., Arizona

**ELEVATION:** 6380' GL; 6396 KB  
**TD:** 6111'  
**PBTD:** 5995' CIBP  
 5985'-5995' Cement Plug

**SURFACE CSG:** 9 5/8", 32.3#, H-40 @ 912'. Cmt to surface w/ite cement.  
**PROD. CSG:** 7", 23.0#, K-55 @ 550'; 26.0# K-55 550'-6111'  
 Cmt to 4230' (temp. survey) w/375 SX Class C

**PROD. TBG:** 2 3/8", 4.7# J-55 EUE  
**OTEEER:** Model "L" Sliding Sleeve @ 5454'  
 Model "F" Nipple @ 5488'

**PACKERS:** Loc-Ser @ 5198'  
 Model D @ 5522'

**PERFORATIONS:** Penn. Desert Crk: 5266-5270': 5 holes  
 Penn. Barker Crk: 5553, 5557, 5573-77': 7 holes  
 Penn. Pinkerton Trail: 5654-50': 7 holes

**LAST TEST:** 6 MCFD @ 45 psi tbg. pressure  
**PROD. ZONE:** Pennsylvanian Paradox: Lower Barker Creek and Pinkerton Trail  
**REFERENCE LOG:** BHC/GR Dated: 7/29/71 @ 6396' KB

**NOTE:** See attached Downhole Configuration sheet for location of cement plugs and perforations.

**OBJECTIVE:** Plug back above Barker Creek and perforate and Acid Frac. Hermosa, Lower Ismay, Desert Creek and Akah.

Casing/tbg.	id(in)	drift id(in)	Burst (psi)	Collapse (psi)	Yield (lbs)
2 3/8" 4.7 #J-55	1.995	1.901	7700	8100	71730
7" 23# K-55	6.366	6.241	4360	3270	-----
7" 26# K-55	6.276	6.151	4980	4320	-----

## PROCEDURE

1. Blade roads to location. Locate anchors and stake. Dig safety blow down pit and spot ~~feet~~ 400 bbl test tanks. Load one tank with minimum of 300 bbl lease water for workover and potential kill fluid and use second for swab/test tank. File sundry with BLM. Accumulate lease water prior to starting work.
2. Inspect surface casing, braden head and well head valves.
3. Install necessary reference gauges, safety valves, and flowlines. Anchor as necessary.
4. RU H2S monitoring equipment and hold H2S certification class for all hands.
5. Check csg backside pressure and report to Grand Prairie office.
6. Rig up workover rig and lay flowlines.
7. Blow down casing and tbg and monitor pressures and gas rate.
8. Pump 50 bbls water down tbg to kill well. If well takes more allow to load. ND WHD and NU BOP.
9. Install flow lines to diverter system and pressure test to 1500 psig.
10. RIH with tear drop standing valve on sandline to Model "F" FN @ 5438'. Pressure test tubing to 1500 psig. Report results to Grand Prairie office.
11. Shoot fluid level on backside to determine fluid level. Load backside with lease water and pressure test casing to 1500 psig. Monitor and record pressure on backside and tubing to verify packer, tubing, and casing integrity. Report to Grand Prairie office. If we determine that there are major casing integrity problems, we will proceed with P & A procedure. If any problems we will solicit CHAP for approval of further action.
12. Attempt to release Baker Lock Set packer set at 5,198' under the supervision of Tool Hand. Release procedure is to pick up 3000 to 6000 lb. above tubing weight and rotate 8 to 10 times to the right. Continue to rotate to right with coming up hole to be sure slips are released and set in the unlocked slot. If unable to release packer, continue to next step. If packer releases go to step #14.
13. RIH with 2 3/8" tubing cutter and cut off tubing 5' above Model 'D' Packer set at 5522'.
14. Reverse circulate fresh water down back side over packer to circulate out cuttings.

15. TOH standing back and LD Lock Set Packer, Model 'L' (C)ling Sleeve, "F" Nipple, and seal mandrill. Note: If any drag/tight spots and depth of same. Inspect tbg. and replace as needed.

- \* 16. PU redressed seal assembly and RIH.

Sting into Baker Model D packer at 5,522'.

Establish injection rate.

Mix and pump 100 sacks of Class B Cement while dropping 25 RCN Ball Sealers at equally spaced intervals.

Displace cement to within 1.5 bbls. of the packer.

Sting out of the packer and dump 1.5 bbls. of cement on top of it.

Pull one joint of tubing and reverse out.

Come out of hole with tubing.

17. Make cleanout trip if needed with 6 1/4" bit and 7" scraper (call Grand Prairie office for go ahead). PU 7" 26# lock set completion Packer, 1 jt. 2 3/8", 2 3/8" FN and RIH on 2/8" tbg to 4790'. Circulate packer fluid (fresh water mixed with corrosion and sulfide cracking inhibitor and oxygen scavenger) down back side to packer and set.
18. Swab down to 4500'. ND BOP's and NU WHD, Release Rig.
19. RU perforators with mast truck. Install lubricator. Run GR/CCL from PBTD to 4700' and correlate and correct depth to reference log. RIH with 1 9/16" or 1 11/16" decentralized perforating gun and perforate the following intervals at 1 SPF, 0 degree phasing.

Perf Depths	Net Pay Thickness	# of Shots	Zone	Gross Pay Thickness
4840', 44', 46'	7'	3 shot	Hermosa	12'
5065'	2'	1 shot	Upper Ismay	10'
5097', 98', 99'	4'	5 shots	Lower Ismay	14'
5100', 01'				
5154'	2'	1 shots	Lower Ismay	8'
5162', 64'	4'	2 shots	Lower Ismay	10'
5174'	2'	1 shots	Lower Ismay	3'
5198', 5201', 04'	6'	3 shots	Desert Creek	26'
5211'	3'	1 shots	Desert Creek	9'
5299'	2'	1 shots	Desert Creek	4'
5350', 60'	2'	2 shots	Akah	8'
5461'	3'	1 shots	Akah	10'
<b>TOTAL</b>	<b>36'</b>	<b>21 shots</b>		<b>114'</b>

In addition to the above, existing perforations are 5266'-5270' in the Desert Creek which swab tested 10 BOPD.

Note:

- 1). Depths to be correlated to the Schlumberger Compensated Sonic Log Dated 7/29/71, Run #1.
  - 2). Report fluid level drop to Grand Prairie office.
21. Flow well if capable for 1/2 hour call Grand Prairie with results.
  22. RU Service Company for acid frac. Install tree saver. Pump lease water down tbg. until formation is loaded (min 1200 gal.). Pressure up to 1000 psi on back side and monitor thru job.
  23. Pump 15,000 gal. of 40 lb/1000 gal X Link Gel at 20 BPM. Do not exceed 4600 psi.
  24. Pump 12,000 gal. of 20% HCl at 20 BPM. Do not exceed 4600 psi.
  25. Pump tbg. capacity plus 2000 gal of lease water at 20 BPM. Do not exceed 4600 psi.  
  
Total FW req'd = 15,000 gal. (357 BBLs)  
Total 20% HCl = 12,000 gal. (286 BBLs)  
Total Lease Water = 4810 gal. (114 BBLs)  
  
Acid to contain inhibitor, nonemulsifier and friction reducer.
  26. Obtain ISIP, 5 min. SIP and 10 min. SIP.
  27. Open well immediately and flow with no choke until rates dictate for safety well needs to be choked. Turn to test separator once well cleans up and gauge gas/water/oil and pressures. Report as needed to Grand Prairie. RD service Company.
  28. If well dies, RU swabbing unit, swab well back until cleaned up and flow test through test separator to obtain fluid and gas flow rates and pressures. Report data to Grand Prairie office as advised.
  29. Flow two hours minimum, or as deemed necessary by Grand Prairie office, under stabilized flow or until cleaned up and shut in well for 72 hours surface pressure build up. Shoot fluid level at end of build up.
  30. Release to production department.

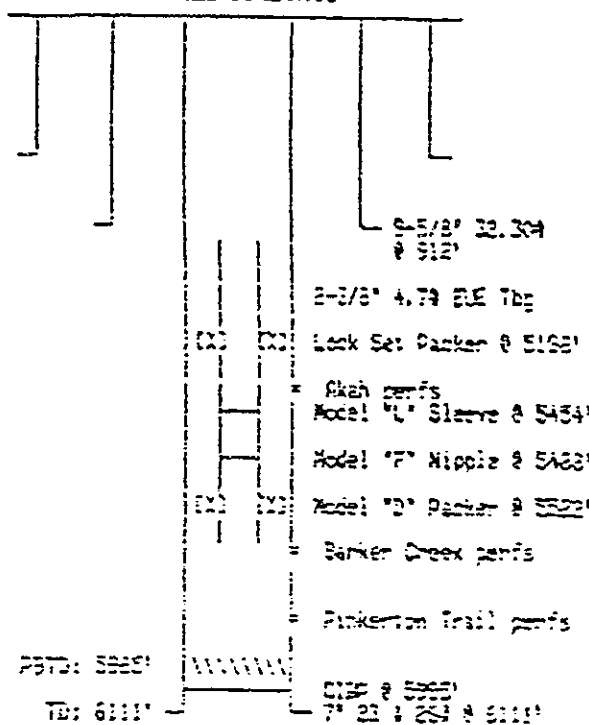
Note:

Engineer to account for and report on Daily Completion Report all fluids injected into and removed from well bore during completion operations.

## WELL RECORD

OPERATOR: CITIES SERVICE OIL COMPANY  
 LEASE DESIGNATION #: 14-20-0603-1522  
 LEASE NAME: MONSANTO-NAVAJO "A" WELL #: 1  
 SECTION: 21 TOWNSHIP: 40 N RANGE: 25 E  
 COUNTY/STATE: A E COUNTY, ARIZONA  
 TRIBE NAME: NAVAJO UNIT NAME:  
 FIELD: BLACK ROCK SURVEY: 1980 FAL & 1980 FEL  
 ELEVATION: 6300' (SEA) TD: 6111' PSTD: 5985'

## WELL SCHEMATIC



## CASING DATA

SIZE	WEIGHT	TYPE	BUTTON	SPECS ON	TOP OF ON
9-5/8	32.30		912	250	SURFACE
7	23.1	25	6111	375	2550

## LOSSING DATA

COMPANY	TYPE	INTERVAL	DATE
SCHLUMBERGER	200/200	5085-5111	7/28/71
SCHLUMBERGER	PROXIMITY	5104-5111	7/30/71
SCHLUMBERGER	NEUTRON POROS	5105-5110	7/30/71
SCHLUMBERGER	DIL	5104-5110	7/30/71

## FORMATION LOG TOPS

DeWally @ 2700'	DESERT CREEK @ 5170'
UPPER ROCK @ 2100'	AKAH @ 5222'
CUTLET @ 3651'	BARKER CREEK @ 5470'
UPPER HERNDON @ 4400'	PINKERTON TRAIL @ 5522'
LOWRY @ 5021'	WILKS @ 5800'
LOWER LOWRY @ 5050'	MISSISSIPPIAN @ 5870'

PRODUCTIVE RESERVOIR: PENNSYLVANIAN

## COMPLETION RECORD

SIZE	WEIGHT	TYPE	LENGTH	SEAT NIPPLES
2-3/8			5521	4" S.E. - 5454" "F" nipple @ 5483"

## PACKER DATA

TYPE	SETTING DEPTH
LOCK SET PACKER	5108
MODEL "D" PACKER	5522
CIBP	5995

## REMARKS

STATUS: SHUT-IN

## TEST DATA

IP: 4 PT: COEF = 7.4 WCF D/D 12 SCFD

DST DATA (X) PVT ( ) CORE ( ) SHP ( )

## PERFORATIONS

FORMATION	DEPTH	GR & SIZE	DATE
BARKER CREEK	5522-57, 73, 74, 75-77	1 Shot/ft 1/2" Jet	1971
PINKERTON TRAIL	5524-5560	1 Shot/ft 1/2" Jet	1971
AKAH	5555-5570	1 Shot/ft 1/2" Jet	1971

## REFERENCE LOG

COMPANY	LOG TYPE	DATE RUN	KB
SCHLUMBERGER	200/200	7/23/71	5085

## STIMULATION

DATE	INTERVAL	SIZE & TYPE	AIR	BEFORE	AFTER
1971	BARKER CREEK	2000 gal 15% HCL	3-1/2	0	TEST
1971	BARKER CREEK	10000 gal 20% HCL	5-1/2	TEST	1.2M 3000
1971	PINKERTON TRAIL	4000 gal 15% HCL	4-1/2	0	3.4M 3750
1971	AKAH	4000 gal 15% HCL	4-1/2	0	15 30 220

## WELL RECORD

OPERATOR: CITIES SERVICE OIL COMPANY

COUNTY/STATE: GILA COUNTY, ARIZONA

LEASE DESIGNATION #: 14-20-0603-1522

TRIBE NAME: NAVAJO

UNIT NAME:

LEASE NAME: MONSANTO-NAVAJO "A"

WELL #: 1

FIELD: BLACK ROCK

SURVEY: 1960 FAL &amp; 1960 FEL

SECTION: 21

TOWNSHIP: 40 N

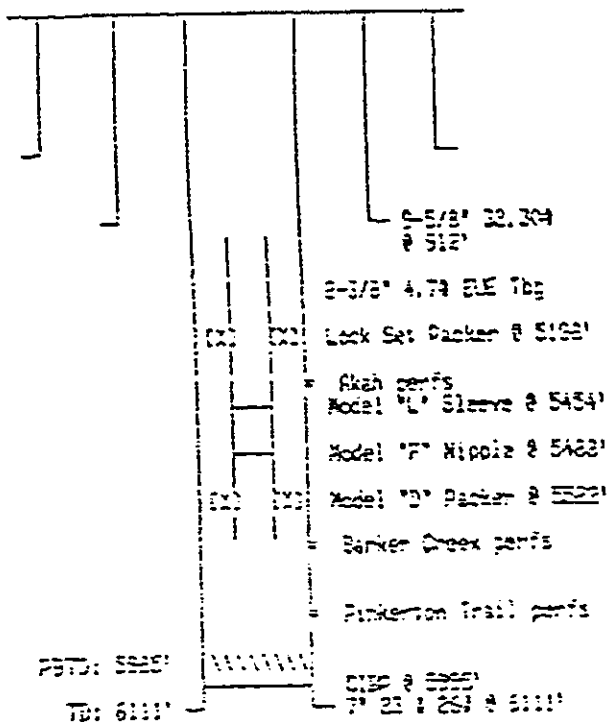
RANGE: 29 E

ELEVATION: 6500' (GR)

TD: 6111'

PSTO: 5585'

## WELL SCHEMATIC



## CASING DATA

SIZE	WEIGHT	TYPE	BOTTOM	SACKS CWT	TOP OF CWT
2-3/8	32.30		912	250	SURFACE
7	22.125		6111	375	3750

## LOSSING DATA

COMPANY	TYPE	INTERVAL	DATE
SCHLUMBERGER	DRIVER	5089-5111	7/25/71
SCHLUMBERGER	PROXIMITY	5104-5111	7/30/71
SCHLUMBERGER	NEUTRON POROSITY	5105-5110	7/30/71
SCHLUMBERGER	DIL	5104-5110	7/30/71

## FORMATION LOG TOPS

BARBER CREEK @ 2700'	DESERT CREEK @ 5170'
BARBER CREEK @ 2100'	AKSH @ 5022'
CUTLER @ 3631'	BARBER CREEK @ 5470'
LOOSE MEMBER @ 4122'	PINKERTON TRAIL @ 5554'
LEWY @ 5022'	WELLS @ 5600'
LOOSE LEWY @ 5052'	MISCELLANEOUS @ 5670'

PRODUCTIVE RESERVOIR: PERMIANIAN

## COMPLETION RECORD

SIZE	WEIGHT	TYPE	LENGTH	SEAT NIPPLES
2-3/8			5521	"L" S.E. - 5454'
				"F" Nipple @ 5453'
				"D" Packer @ 5522'

## PACKER DATA

TYPE	SETTING DEPT
LOCK SET PACKER	5136
MODEL "D" PACKER	5522
CISB	5505

## REMARKS

STATUS: SHUT-IN

## TEST DATA

IP: 4 PT: CROP = 7.4 MCF P/D 12 SCFD
DST DATA (X) PVT ( ) CORE ( ) SHP ( )

## PERFORATIONS

FORMATION	DEPTH	LEN & SIZE	DATE
BARBER CREEK	5089-51, 73, 74, 75-77	1 Shot/ft 1/2" Jet	1971
PINKERTON TRAIL	5554-5560	1 Shot/ft 1/2" Jet	1971
AKSH	5556-5570	1 Shot/ft 1/2" Jet	1971

## REFERENCE LOG

COMPANY	LOG TYPE	DATE RUN	K2
SCHLUMBERGER	DRIVER	7/25/71	5026

## MISCELLANEOUS

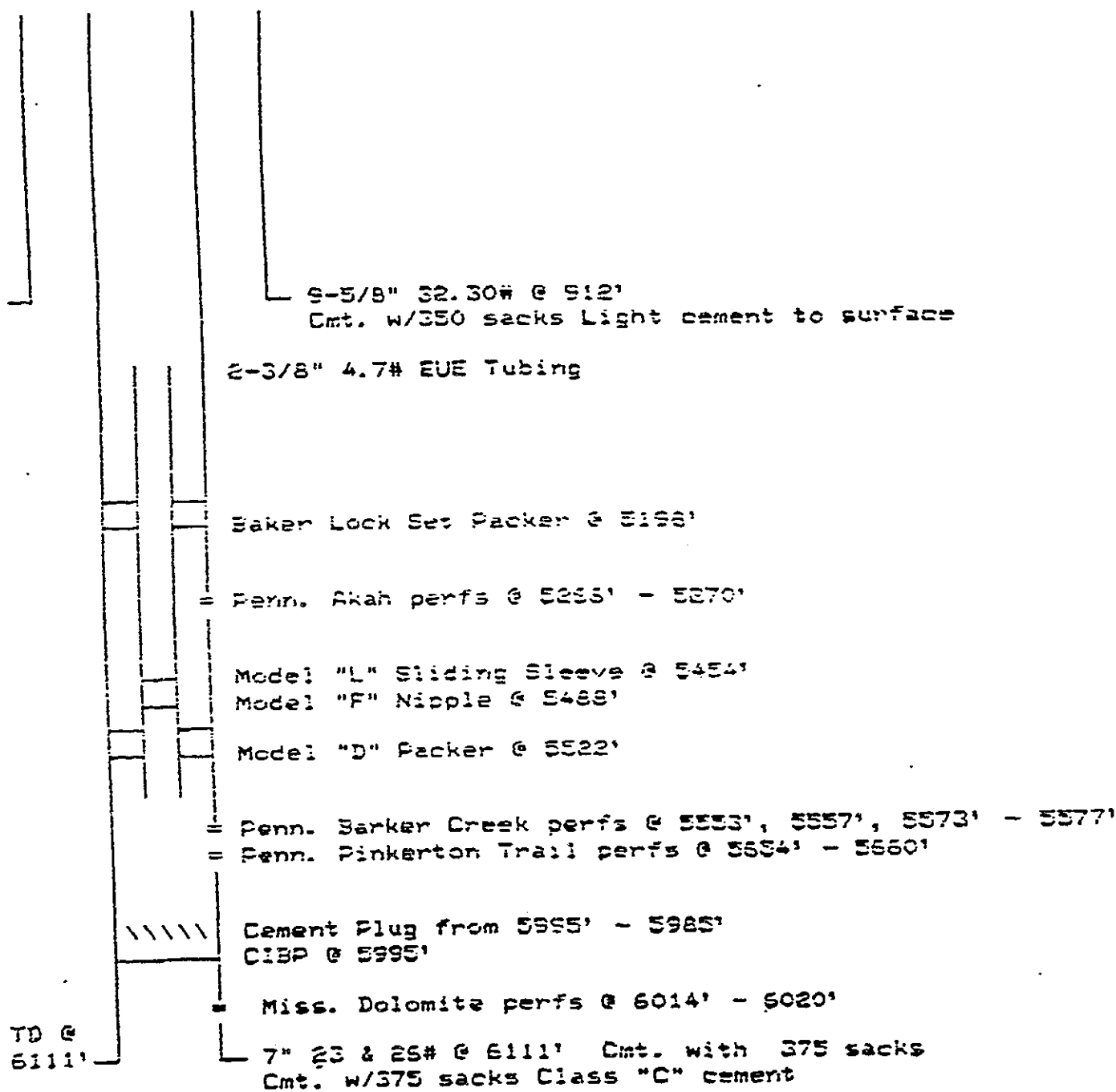
## STIMULATION

DATE	INTERVAL	SIZE & TYPE	AIR	BEFORE	AFTER
1971	BARBER CREEK	2000 gal 15% HCL	3-1/2"	0	TEST
1971	BARBER CREEK	10000 gal 24% HCL	5-1/2"	TEST	1.2M 5000
1971	PINKERTON TRAIL	4000 gal 15% HCL	4-1/2"	0	2.4M 9750
1971	AKSH	4000 gal 15% HCL	4-1/2"	0	15 SC 220



60' x 7410'

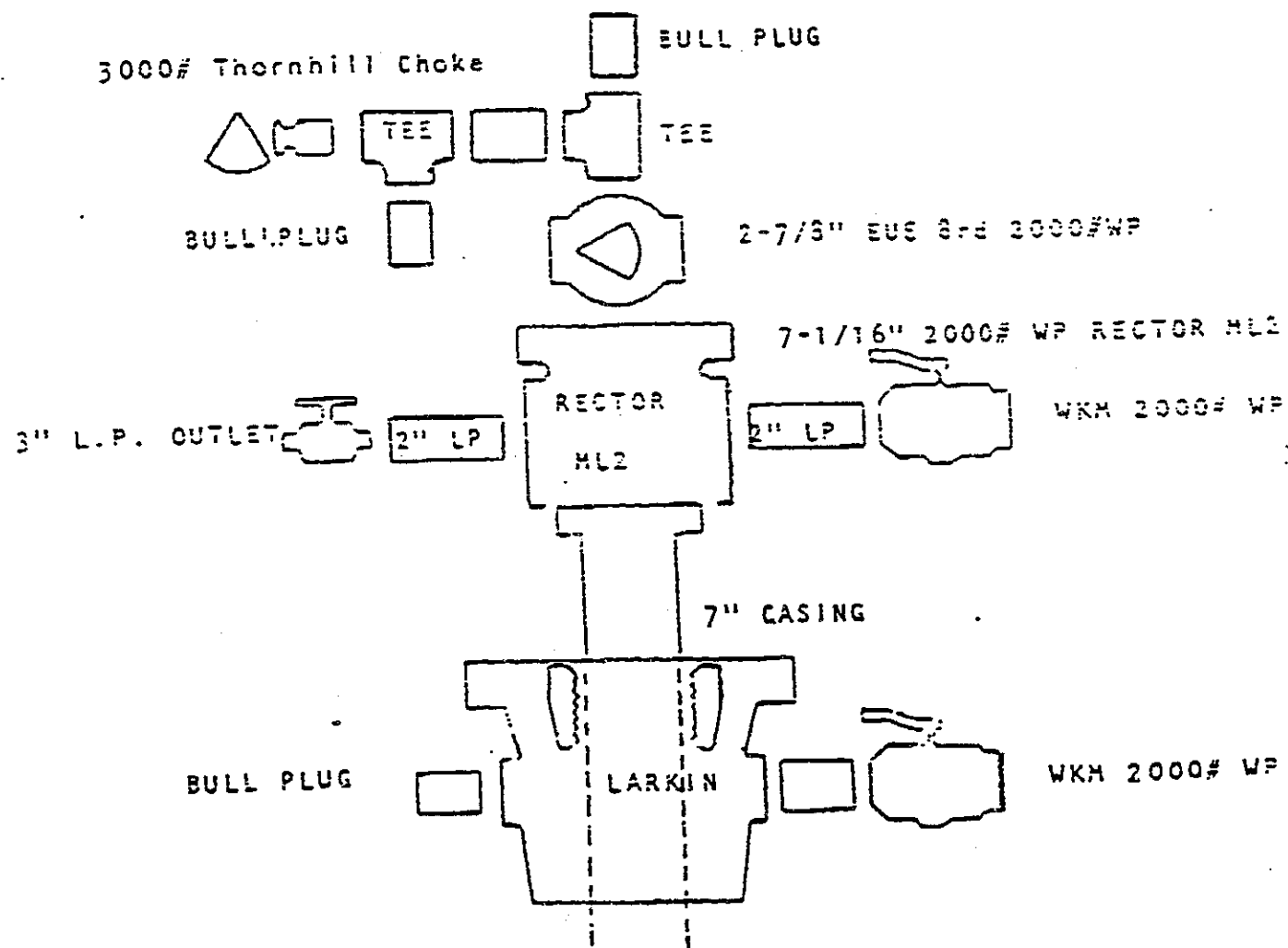
SCHEMATIC OF  
 'ONSANTO-NAVAJO "A" 1  
 Sec. 21 T40N R29E  
 Apache County, Arizona



(SEE ATTACHED SHEETS FOR DETAILS OF STIMULATION AND TESTS)

SECTION 21 TOWNSHIP: 40 N RANGE: 29 E  
 MONSANTO-NAVAJO "A" #1  
 APACHE COUNTY, ARIZONA

CURRENT WELLHEAD SCHEMATIC:



**AZ OIL & GAS  
CONSERVATION COMMISSION**

**SUNDRY NOTICES AND REPORTS ON WELLS OCT 25 1989**

1. Name of Operator Chuska Energy Company 315 N. Behrend Avenue, Farmington, NM 87401

2. OIL WELL ☐ GAS WELL ☒ OTHER ☐ (Specify) \_\_\_\_\_

3. Well Name Black Rock #1

Location 1930' FNL & 1050' FEL

Sec. 21 Twp. 40N Rge. 29E County Apache, Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease \_\_\_\_\_  
Navajo Tribal; NOG 8702-1116

5. Field or Pool Name Black Rock Paradox

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	DIRECTIONAL DRILL <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	PERFORATE CASING <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>
(OTHER) _____	

SUBSEQUENT REPORT OF:

WATER SHUT-OFF <input type="checkbox"/>	MONTHLY PROGRESS <input type="checkbox"/>
FRACTURE TREATMENT <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
SHOOTING OR ACIDIZING <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
(OTHER) <u>First Delivery</u>	ABANDONMENT <input checked="" type="checkbox"/>

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

First delivery of gas at 1600 hours, 9/29/89.  
Estimated rates: 3940 MCFD, 6 BCPD, 0 BHPD, FTP 660 psi.

8. I hereby certify that the foregoing is true and correct.

Signed Donald S. Barnes

Title Operations Manager Date 10-20-89

Permit No. 559

**STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION**  
Sundry Notices and Reports On Wells  
File One Copy  
Form No. 25

Form 3160-5  
November 1983  
(Formerly 9-331)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE  
(Other instructions  
verse side)

Form approved.  
Budget Bureau No. 1004-D135  
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.  
NOG-8202-1116

6. IF INDIAN, ALLOTTEE OR TRIBE NAME  
NAVAJO

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME  
Monsanto-Navajo "A"

9. WELL NO.  
#1

10. FIELD AND POOL, OR WILDCAT  
Wildcat

11. SEC. T., R., M., OR BLM. AND  
SUNNY OR AREA  
Sec. 21 T40N R29E

12. COUNTY OR PARISH 13. STATE  
Apache Arizona

559 SUNDRY NOTICES AND REPORTS ON WELLS  
(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR  
CHUSKA ENERGY COMPANY

3. ADDRESS OF OPERATOR  
P.O. BOX 901 FARMINGTON, NEW MEXICO 87499

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.  
See also space 17 below.)  
At surface

1980' FNL & 1050' FEL

14. PERMIT NO.

15. ELEVATIONS (Show whether DT, ST, OM, etc.)  
6383' GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

(Other) WORKOVER PROGRAM

PULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON\*

CHANGE PLANE

X

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other)

REPAIRING WELL

ALTERING CASING

ABANDONMENT\*

(NOTE: Report results of multiple completion on Well  
Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

1. ATTACHED IS A PROPOSED WORKOVER PROGNOSIS FOR THE ABOVE REFERENCED WELL.

APPROVED

By

Date

STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE

V.P. DRILLING OPERATIONS

DATE 8-9-88

(This space for Federal or State office use)

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

#### WORKOVER PROCEDURE

PROSPECT: Black Rock  
WELL: Monsanto-Navajo "A" 1  
LOCATION: Section: 21 Township: 40 N Range: 29 E  
COUNTY: Apache  
STATE: Arizona

---

TD: 6111 feet  
PBD: 5985 feet - Cement Plug  
CIBP: Cast Iron Bridge Plug @ 5995 feet  
CASING: 9-5/8" @ 912 feet (Surface)  
7" @ 6111 feet (Production)  
TUBING: 2-3/8" 4.7# EUE  
PACKER: Lock Set @ 5198 feet  
Model "D" @ 5522 feet

PERFORATIONS: Penn. Akah: 5266 - 5270  
Penn. Barker Creek: 5553, 5557, 5573-77  
Penn. Pinkerton Trail: 5654 - 5660

LAST FLOW TEST: 1971 BOPD: 2 MMCFD: 7.4  
PRODUCTION ZONE: Pennsylvanian

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NOTE: See attached sheet for location of cement plugs and perforations.

1. Clean up roads and location. Install anchors and construct small reserve pit.
2. Inspect surface casing, install and test wellhead welds.
3. Install gauges, safety valves and flowlines as per diagram.
4. Check for H<sub>2</sub>S.
5. Check casing back side for pressure.
6. Rig up workover rig unit and open well. Bleed off pressure.
7. Install BOP's with diverter system and test to 3,000 psi.
8. Pressure test 7" 23# & 26# casing to 1,000 psi.
9. Pick up on 2-3/8" 4.7# EUE tubing and attempt to unseat the packer at 5,198'.

NOTE: If unable to unseat tubing and packer then proceed with step 9A.

9A. Run in hole with 2-3/8" tubing cutter and cut tubing off approximately 5' above packer.

9B. Circulate hole and top of packer with 2% KCL.

9C. Pull out of hole with tubing.

9D. Make up overshot and fishing jars and run in hole.

9E. Latch onto 2-3/8" tubing.

9F. Run in hole with 2-3/8" tubing cutter.

9G. Cut tubing approximately 5' above Model "D" packer at 5522'.

9H. Work Lock Set packer free.

9I. Circulate and condition hole with 2% KCL.

9J. Pull out of hole with tubing and packer.

NOTE: Continue with step 12.

10. Circulate hole with 2% KCL.

NOTE: Have Gel on location for possible loss circulation.

11. Pull out of hole with tubing and Lock Set Packer.

12. Run in hole with wash pipe and mill out top packer slips at 5,522'.

13. Run in hole and retrieve packer.

17. Pull out of hole and make up 6-1/4" bit and casing scraper.

18. Run in hole to 5,900'. Circulate and condition.

19. Pull out of hole and rig up electric logging equipment.

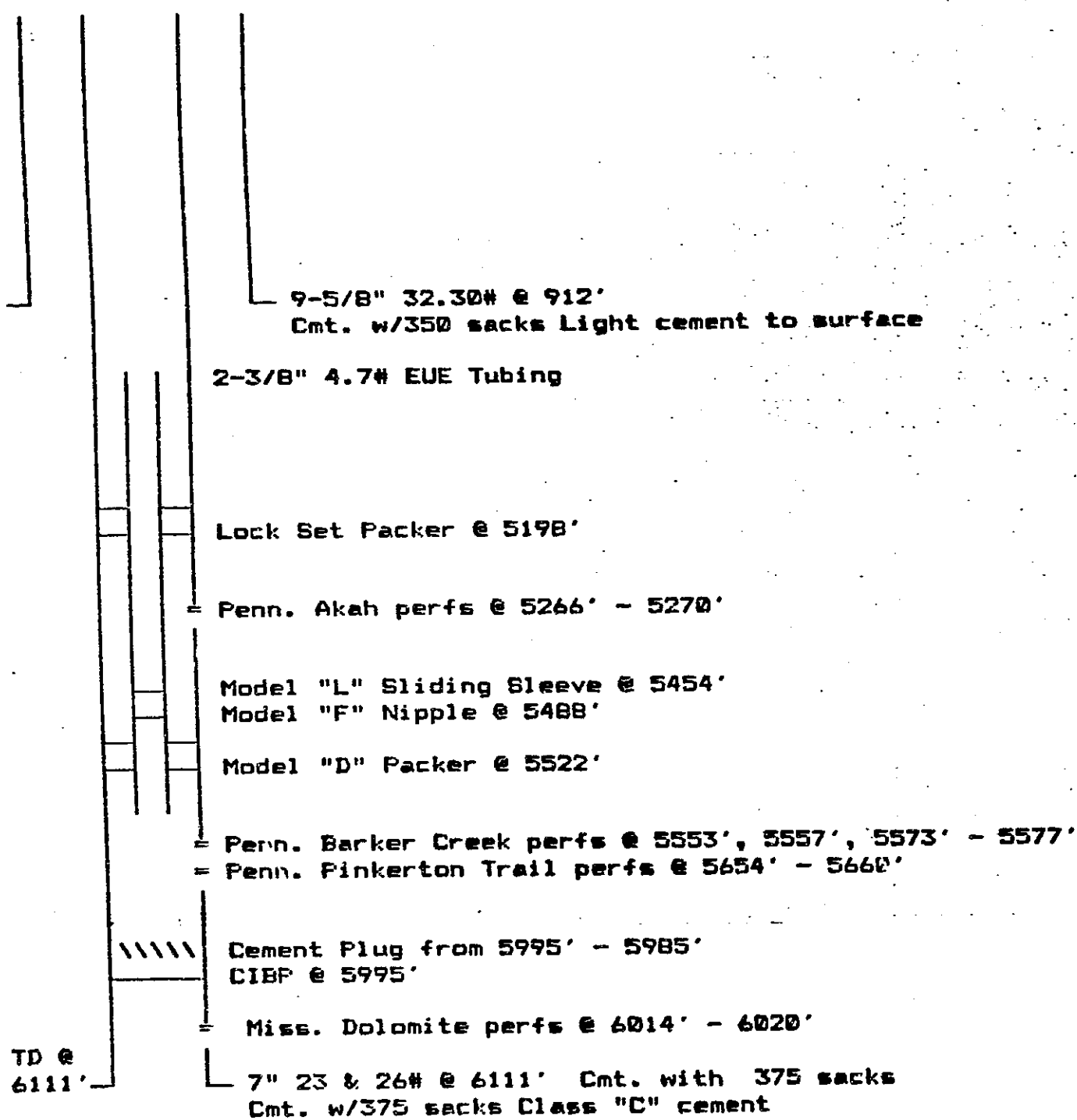
20. Run the following logs:

1. PAL from 5800' to 4800'
2. NGT from 5800' to 4800'
3. CET from 5800' to 4800'
4. CBL from 5800' to 4800'

NOTE: Cement squeezes, re-perforating and opening additional pay will be done after all logs have been evaluated.

See EXHIBIT "A" For Acid Treatment:

SCHEMATIC OF  
MONSANTO-NAVAJO "A" 1  
Sec. 21 T40N R29E  
Apache County, Arizona



(SEE ATTACHED SHEETS FOR DETAILS OF STIMULATION AND TESTS)

Information On Stimulation and Testing  
Monsanto-Navajo A-1  
1980 FNL & 1050 FEL  
Sec. 21 T40N R29E  
Apache County, Arizona

**MISS. DOLOMITE:** (6014 to 6020 feet) Acidize with 500 gallons of 15% MCA. Maximum of 2200 psi, treated at 1-1/2 B/M at 600 psi. Well went on vacuum. Total load to recover is 42 bbls of water. Swabbed all load water plus 75 bbls of formation fluid in 6 hours. Swabbing rate of 20 bbl/hr. Fluid level was 2800' from surface. No oil or gas recovered. Set cast iron bridge plug at 5995' to seal off perforations. Top of cement plug at 5985'.

**PENN. PINKERTON TRAIL:** (5653 to 5660 feet) Swab 7 bbls of load water in 1/2 hour. Water started flowing. Flow to pit for clean up for 1-1/2 hours, then into separator equipment for 3 hour test. FTP 150 psi on 32/64" choke. Gas rate at the beginning of test was 374 MCFD. Shut-in well. Pressure build up after 1 minute was 400 psi, 5 minutes 500 psi, 10 minutes 650 psi, 15 minutes 850 psi, 20 minutes 940 psi, 25 minutes 1025 psi, 30 minutes 1120 psi and 35 minutes 1170 psi. Acidized perforations with 4000 gallons 15% HCL with 1 gallon inhibitor and 2 gallons surfactant per 1000 gallons of acid. Maximum 2700 psi. Treated at 4-1/2 B/M at 2500 psi. Total load water 122 bbls.. Initial shut-in pressure, well on vacuum. Swabbed 7 bbls load water in 1/2 hour. Well started flowing. Flow to pit for 2 hours of clean up, then into test equipment for 5 hour test. Flow rate was 2.54 MMCFD on a 20/64" choke. FTP 1100 psi, 3.40 MMCFD, 25/64" choke, FTP 975 psi. Shut-in well. 15 minute SITP 1300 psi. Recovered 45 bbls load water leaving 77 bbls to recover. Perforations temporarily plugged off. Set retrievable bridge plug at 5615'.

**PENN. BARKER CRK:** (5553 to 5577 feet) Set RTTS packer at 5511'. Swabbed dry recovering 20 bbls load water in 1 hour. Acidized with 2000 gallons 15% HCL. Break down at 1800 psi at 2 B/M. Treated at 3-1/2 B/M at 1700 to 2000 psi. Maximum 2000 psi. ISIP 1100 psi, 15 minute SIP 900 psi. Total load water of 72 bbls. Well back flowed 20 bbls and died. Swabbed 52 bbls load water lowering fluid level to 5200'. All load water recovered. Well flowing gas at 25 MCFD. Shut-in for 1 hour. Fluid level up 100'. Swabbed 1/10 bbl water with a trace of oil. Shut-in well. 1 minute SIP 20 psi, 30 minute SIP 50 psi, 1 hour SIP 80 psi, 8 hour SIP 475 psi. Fluid level 2000' from surface. Made 1 swab run recovering 4 bbl acid water with a trace of



oil. Well flowed 1/2 hour and died. Well flowing gas TSTM, estimated rate of 25 MCFD. Shut-in well. 1 minute SIP 20 psi, 30 minute SIP 55 psi, 90 minute SIP 90 psi. Acidize perforations with 10000 gal 28% HCL. Maximum 3200 psi, AIR 6.5 B/M at 2900 psi. ISIP well on vacuum. 320 bbl of load water to recover. Swabbed 80 bbls load water in 2 hours. Well started flowing. Clean up to pit for 2 hours recovering 20 bbl load water then turned into test equipment for 4 hour test. Flow rate 3.44 MMCFD thru a 30/64" choke, FTP 875 psi. Well still not cleaned up. 220 bbl load water yet to recover. Shut-in well. ISIP 1000 psi, 30 minute SIP 1150 psi, 8 hour SITP 1325 psi. Open well and flow for 10 hour period. Well producing at 4.2 MMCFD, FTP 800 psi thru a 32/64" choke. Recover 115 bbl load water. Shut-in well. 15 minute SIP 1300 psi. Killed well. Release RTTS & lower to top of sand bridge at 5606'. Unable to reverse sand off bridge plug. Went in hole open ended and reversed off sand, moved bridge plug up hole to 5300'.

PENN. AKAH: (5266 to 5270 feet) Set RTTS at 5225'. Swabbed 19 bbl load water in 2 hours lowering fluid level to 4900' from surface. No fluid coming in hole. 915 bbl load water to recover. Acidized with perforations with 500 gal; MCA. Maximum 2150 psi. Treated at 3 B/M at 200 psi. Recovered 45 bbl load water. ISIP 1550 psi, 10 minute SIP 1400 psi, bled down. Swabbed well down to 5000' recovering all load water in 3 hours. Fluid coming into hole at rate of 1 bbl of oil per hour. Swabbed 4 bbl of 41 gravity oil in 4 hours. Swabbing rate 1 bbl fluid/hr. Recovery approx. 70% oil. Flowed 45 bbl load water in 1 hour. Well died. Swabbed 4 bbl oil & 55 bbl load water in 6 hrs. Still have 43 bbl load water to recover. Treated perforations with 4000 gal 15% HCL. Max 3200 psi. Air 4-1/2 B/M at 2800 psi. ISIP 1500 psi, 10 minute SIP 1200 psi. Flushed with 1000 gal treated water. Total load to recover 143 bbl. Swab testing. SITP 375 psi in 14 hours. Fluid level 5175' from surface. Recover 33 bbl load water. Fluid influx into well bore at 1/2 bbl per hr. (30% oil). Swab testing. SITP 350 psi in 14 hrs. Swabbed 4 bbl oil & 5 bbl load water in 9-1/2 hrs. Fluid level 5175' from surface. 28 bbl load water yet to recover. Chlorides 30300 PPM., pH 6.0.

Pulled RTTS and bridge plug. Set Model "D" at 5522' with Model "F" (1.81" ID) setting nipple at 5480' and Model "L" sliding sleeve (1.87" ID) at 5454' and a Lock set packer at 5198'.

oil. Well flowed 1/2 hour and died. Well flowing gas TSTM, estimated rate of 25 MCFD. Shut-in well. 1 minute SIP 20 psi, 30 minute SIP 55 psi, 90 minute SIP 90 psi. Acidize perforations with 10000 gal 28% HCL. Maximum 3200 psi, AIR 6.5 B/M at 2900 psi. ISIP well on vacuum. 320 bbl of load water to recover. Swabbed 80 bbls load water in 2 hours. Well started flowing. Clean up to pit for 2 hours recovering 20 bbl load water then turned into test equipment for 4 hour test. Flow rate 3.44 MMCFD thru a 30/64" choke, FTP 875 psi. Well still not cleaned up. 220 bbl load water yet to recover. Shut-in well. ISIP 1000 psi, 30 minute SIP 1150 psi, 8 hour SITP 1325 psi. Open well and flow for 10 hour period. Well producing at 4.2 MMCFD, FTP 800 psi thru a 32/64" choke. Recover 115 bbl load water. Shut-in well. 15 minute SIP 1300 psi. Killed well. Release RTTS & lower to top of sand bridge at 5606'. Unable to reverse sand off bridge plug. Went in hole open ended and reversed off sand, moved bridge plug up hole to 5300'.

PENN. AKAH: (5266 to 5270 feet) Set RTTS at 5225'. Swabbed 19 bbl load water in 2 hours lowering fluid level to 4900' from surface. No fluid coming in hole. 915 bbl load water to recover. Acidized with perforations with 500 gal; MCA. Maximum 2150 psi. Treated at 3 B/M at 200 psi. Recovered 45 bbl load water. ISIP 1550 psi, 10 minute SIP 1400 psi, bled down. Swabbed well down to 5000' recovering all load water in 3 hours. Fluid coming into hole at rate of 1 bbl of oil per hour. Swabbed 4 bbl of 41 gravity oil in 4 hours. Swabbing rate 1 bbl fluid/hr. Recovery approx. 70% oil. Flowed 45 bbl load water in 1 hour. Well died. Swabbed 4 bbl oil & 55 bbl load water in 6 hrs. Still have 43 bbl load water to recover. Treated perforations with 4000 gal 15% HCL. Max 3200 psi. Air 4-1/2 B/M at 2800 psi. ISIP 1500 psi, 10 minute SIP 1200 psi. Flushed with 1000 gal treated water. Total load to recover 143 bbl. Swab testing. SITP 375 psi in 14 hours. Fluid level 5175' from surface. Recover 33 bbl load water. Fluid influx into well bore at 1/2 bbl per hr. (30% oil). Swab testing. SITP 350 psi in 14 hrs. Swabbed 4 bbl oil & 5 bbl load water in 9-1/2 hrs. Fluid level 5175' from surface. 28 bbl load water yet to recover. Chlorides 30300 FPM., pH 6.0.

Pulled RTTS and bridge plug. Set Model "D" at 5522' with Model "F" (1.81" ID) setting nipple at 5488' and Model "L" sliding sleeve (1.87" ID) at 5454' and a Lock set packer at 5198'.

Swabbed 50 bbl load water from PENN. Barker Creek & Pinkerton Trail perforations. Recovered 250 bbl load water in 12-1/2 hrs. FTP 200 psi on a 1" choke. Shut-in well. SITP 600 psi in 30 minutes. SITP 1275 psi in 11 hrs. Flowed 326 bbl load water & 3 bbl condensate in 21 hrs. Volume at end of test period 3.76 MMCFD on 1/2" choke, FTP 715 psi. Fluid rate 3.7 bbl load water & 0.6 bbl condensate/hr. Still lack 234 bbl load water to recover. Flowed 12 bbl distillate & 60 bbl load water in 24 hrs. Gas volume at end of test was 4.14 MMCFD on 1/2" choke. FTP 750 psi. 174 bbl load water to recover.

PENN. BARKER CRK: (5653 to 5660 ft & 5553 to 5577 ft) 10 hr shut-in 1280 SITP. Ran BHP bomb.

Flowed well at 4 rates: 1st rate: 12/64" choke FTP 1247 psi, 1.01 MMCFD, no fluid. 2nd rate: 17/64" choke FTP 1190 psi, 1.85 MMCFD, no fluid. 3rd rate: 21/64" choke FTP 1098 psi, 2.62 MMCFD, 1 BD, 1/2 BLW. 4th rate: 27/64" choke FTD 876 psi, 3.36 MMCFD, 1-1/4 BD, 2 BLW.

Flow rates completed 8-27-71. Pulled BHP bomb. CADF of Penn. Barker Creek is 7.4 MMCFD. Slope of 0.6531. Well shut-in.

#### DST Information & Results:

##### DST #1:

5060'-5107' Akah: No water cushion. 5/8" bottom choke. Opened for 15 min. preflow, strong blow of gas in 5 min.. Closed for 90 min.. Opened tool for 90 min. flow period. Flowed gas at a rate of 318 MCFD on 5/8" choke w/25 psi flow pressure. Closed tool for 90 min. FSIP. Recovered one bbl gas cut drilling mud w/rainbow of oil on drill pipe. Pressure on 15 min. preflow 53# to 107#. ISIP 1418 (90 min.). IFP 80#; FFP 80# (90 min.), FSIP 615 (90 min.), BHT 115°F, MCP (in & out) 2462.

##### DST #2:

5250'-5375' Atoka: No water cushion. 3/4" bottom & 5/8" top choke. Tool opened for 15 min. preflow w/weak blow. Closed for 90 min. ISIP. re-opened for 90 min. flow period. Gas to surface in 25 min. w/good blow decreasing to weak blow. No surface pressure. Closed tool for 90 min. FSIP, recovered 300' of 41 gravity oil and 300' of heavy oil and gas cut drilling mud. 15 min. preflow 80 psi -- 107 psi; 90 min. ISIP 2301 psi (incorrect); IF 134 psi; FF 214 psi; 90 min. FSIP 1006 psi, MCP (in & out) 2516 psi, BHT 120°F.

**DST #3:**

**5195'-5221' Barker Creek:** No water cushion. 3/4" bottom & 5/8" top choke. Tool opened for 15 min. preflow with weak blow. Shut-in for 90 min. ISIP, then opened well for 60 min. flow period. Weak blow throughout test. No surface pressure. Shut-in for 60 min. FSIP. Recovered 30' gas cut mud w/slight rainbow of oil. Preflow 53 psi, 90 min. ISIP 373 psi, IF 53 psi, FF 53 psi, 60 min. FSIP 320 psi, MCP in & out 2489 psi, BHT 108°F.

**DST #4:**

**5545'-5670' Lower**

**Pinkerton Trail:** No water cushion. 3/4" top & bottom chokes. Opened tool for 15 min. preflow, flowed with strong blow. Gas to surface in 4 min.. Closed tool for 90 min. ISIP. Re-opened with strong blow increasing to 550 psi max. surface pressure on 3/4" choke, decreasing to 410 psi at conclusion of test. Gas rate 5.945 MMCFD. Closed tool for 90 min. FSIP. Recovered 300' of heavy gas cut mud w/trace of condensate. 15 min. preflow 535 psi -- 562 psi; 90 min. ISIP 1525 psi, IF 481 psi, FF 669 psi, 90 min. FSIP 1499 psi, BHT 120°F. MCP (in & out) 2651 psi.

**DST #5:**

**5948'-6000' Upper Miss.:** No water cushion. 3/4" top & bottom chokes. Opened tool for 15 min. preflow. No blow. Closed tool for 60 min. ISIP. Re-opened for 60 min. flow period. No blow. Closed tool for 60 min. FSIP. Recovered 5' drilling mud. 15 min. preflow 53 psi -- 133 psi, 60 min. ISIP 1379 psi, IF 53 psi, FF 80 psi, 60 min. FSIP 347 psi, MCP in 2992 psi, MCP out 2886 psi, BHT 132°F.

Type Test		<input checked="" type="checkbox"/> Initial		<input type="checkbox"/> Annual		<input type="checkbox"/> Special		Test Date		8-28-71		Well Name		Monsanto-Nava Jo A																																																																																					
Company				Cities Service Oil Company				Connection				--				Permit No.		559																																																																																	
Type				Undesignated				Formation				Pennsylvanian				Unit																																																																																			
Completion Date				8-29-71				Total Depth				6111				Plug Back TD				5990				Elevation		6383 GR		Farm or Lease Name		Monsanto-Nava Jo A																																																																					
Csk. Size		7"		Wt.		23		66,366		Set At		6110		Perforations:				From -- To --				Well No.				1																																																																									
Tub. Size		2 3/8"		Wt.		4.7		2"		Set At		5531		Perforations:				5553-5577 From 5653 To 5660				N - 4 Sec. Twp. Rge.				21 40N 29E																																																																									
Type Well - Single - Bradenhead - G.G. or G.O. Multiple										Packer Set At										5522										County										Apache																																																											
Producing Thru										Tubing										Reservoir Temp. °F										136										Mean Annual Temp. °F										Approx 60										Baro. Pres. - P <sub>a</sub>										12.2										State										Arizona									
L		5531		H		5531		Gr.		0.703		% CO <sub>2</sub>		2.85		% N <sub>2</sub>		8.32		% He		Prover		Meter Run		3"		Tape		Flange																																																																					
FLOW DATA										TUBING DATA										CASING DATA										Duration of Flow																																																																					
NO.	Prover Line Size	X	Choke Orifice Size	Press. p.s.i.g.	Diff. h <sub>w</sub>	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F																																																																					
IS1	35 Hr. BHP										1511.2 p.s.i.g.																																																																																								
1.	3"		2"	262	6	85	1474	69											45 min																																																																																
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3.	3"		2"	418	25	90	1364	75											3 hr.																																																																																
4.	3"		2"	420	40.5	85	1221	71											4 1/2 hr.																																																																																
5.																																																																																																			
RATE OF FLOW CALCULATIONS																																																																																																			
NO.	Coefficient (24-Hour)	$\sqrt{h_w P_m}$	Pressure P <sub>m</sub>	Flow Temp. Factor F <sub>L</sub>	Gravity Factor F <sub>G</sub>	Super Compress. Factor, F <sub>pv</sub>	Rate of Flow Q, Mcfd																																																																																												
1.	21.32	40.50	274.2	0.9768	1.193	1.022	1028																																																																																												
2.	21.32	75.11	275.2	0.9706	1.193	1.021	1893																																																																																												
3.	21.32	103.71	430.2	0.9723	1.193	1.033	2649																																																																																												
4.	21.32	132.30	432.2	0.9768	1.193	1.034	3393																																																																																												
5.																																																																																																			
NO.	P <sub>r</sub>	Temp. °K	T <sub>r</sub>	Z	Gas Liquid Hydrocarbon Ratio	API Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature																																																																																									
1.	0.412	545	1.50	0.958	--	--	0.703		665	364																																																																																									
2.	0.414	552	1.52	0.960																																																																																															
3.	0.647	550	1.51	0.937																																																																																															
4.	0.650	545	1.50	0.935																																																																																															
5.																																																																																																			
P <sub>c</sub> 1511.2 P <sub>c</sub> <sup>2</sup> 2283.7																																																																																																			
NO.	P <sub>1</sub> <sup>2</sup>	P <sub>w</sub>	P <sub>w</sub> <sup>2</sup>	P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup>	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{2283.7}{74.9}$	(2) $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 7.2$																																																																																													
1.		1486.2	2208.8	74.9																																																																																															
2.		1441.2	2077.0	206.7																																																																																															
3.		1376.2	1893.9	389.8																																																																																															
4.		1233.2	1520.8	762.9																																																																																															
5.																																																																																																			
AOF = Q $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 7.4 \text{ MMCFD}$																																																																																																			
Absolute Open Flow 7400 Mcfd @ 10.025 Angle of Slope 0 Slope, n 572																																																																																																			
Remarks:																																																																																																			

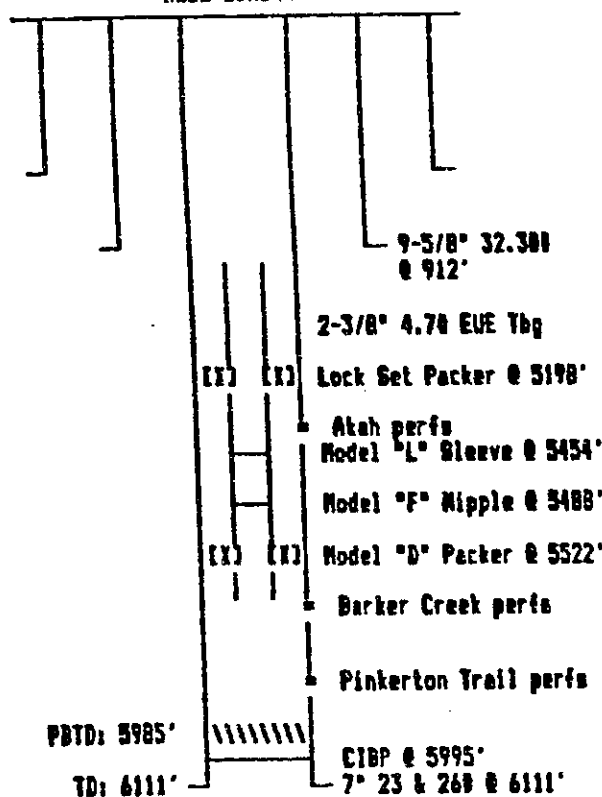
9-1-71

STATE OF ARIZONA OIL & GAS  
CONSERVATION COMMISSION  
Multipoint and One Point Black Press  
Tests for Gas Well  
Form No. 18 (fill two copy)

# WELL RECORD

OPERATOR: CITIES SERVICE OIL CO.  
 LEASE DESIGNATION #: 14-28-8693-1522  
 LEASE NAME: MONSANTO-NAVAJO "A"  
 SECTION: 21 TOWNSHIP: 48 N RANGE: 29 E  
 COUNTY/STATE: APACHE COUNTY, ARIZONA  
 TRIBE NAME: NAVAJO  
 FIELD: BLACK ROCK  
 ELEVATION: 6383 (KB)  
 UNIT NAME:  
 SURVEY: 1988 FNL & 1988 FEL  
 TD: 6111' PBD: 5985'

## WELL SCHEMATIC



## CASING DATA

SIZE	WEIGHT	TYPE	BOTTOM	SACKS CNT	TOP OF CNT
9-5/8	32.30		912	250	SURFACE
5-1/2	23 & 26		6111	375	3550

## LOGGING DATA

COMPANY	TYPE	INTERVAL	DATE
SCHLUMBERGER	BHC/GR	6099-911	7/29/71
SCHLUMBERGER	PROXIMITY	6104-911	7/30/71
SCHLUMBERGER	NEUTRON POROS	6105-910	7/30/71
SCHLUMBERGER	DIL	6104-910	7/30/71

## FORMATION LOG TOPS

DeCHELLY @ 2738'	AKAH @ 5322'
ORGAN ROCK @ 3102'	BARKER CREEK @ 5478'
CUTLER @ 3691'	MOLAS @ 5779'
HERMOSA @ 4442'	MISS. Limestone @ 5878'
ISMAY @ 5836'	MISS. DOLomite @ 5940'
DESERT CREEK @ 5178'	

PRODUCTIVE RESERVOIR: PENNSYLVANIAN

## COMPLETION RECORD

### TUBING RECORD

SIZE	WEIGHT	TYPE	LENGTH	SEAT NIPPLES
2-3/8			5531	"L" S.S.-5454' "F" Nipple @ 5488'

### PACKER DATA

TYPE	SETTING DEPTHS
LOCK SET PACKER	5198
MODEL "D" PACKER	5522
CIBP	5995

### REMARKS

STATUS: SHUT-IN

### TEST DATA

IP: 4 PT: CADP = 7.4 MMEF P/D 12 BCPD

BSI DATA (X) PVT ( ) CORE ( ) BHF ( )

## PERFORATIONS

FORMATION	DEPTHS	DEN & SIZE	DATE
BARKER CREEK	5553-57, 73, 74, 75-77	1 Shot/ft 1/2" Jet	1971
PINKERTON TRAIL	5654-5660	1 Shot/ft 1/2" Jet	1971
AKAH	5266-5270	1 Shot/ft 1/2" Jet	1971

## SQUEEZE & REPAIRS

DATE	DEPTH	WORK DONE

## STIMULATION

DATE	INTERVAL	SIZE & TYPE	AIR	BEFORE	AFTER
1971	BARKER CREEK	2000 gal 15% HCL	3-1/2	0	TEST
1971	BARKER CREEK	10000 gal 20% HCL	4-1/2	TEST	4.2MM 000ps
1971	PINKERTON TRAIL	4000 gal 15% HCL	4-1/2	0	3.4MM 975ps
1971	AKAH	4000 gal 15% HCL	4-1/2	0	16 DD 220 F

**EXHIBIT "A"**  
**ACID TREATMENT**  
**(All Zones of Interest)**

After the well has been worked over and all logging, squeeze jobs and perforating completed, the following acid treatment will be performed over each individual zone of interest.

-----  
**NOTE:** All perforating will be done prior to stimulation.

**GUN TYPE:** 4" Decentralized Hollow Carrier w/Select Fire  
**CHARGE SIZE:** 41A Hyperjet III  
**CHARGE DEN:** 1 Jet Shot per foot

1. Run Guiberson RBP-VI (or similar packer) with two 48 hour, 8,000 psi, pressure bombs contained in a perforated sub below the packer. Bombs should be protected from damage with springs both above and below.

**NOTE:** This packer will be run in conjunction with a treating packer. See step #2.

2. Pick up on tubing to set Guiberson HDCH-V (or similar) treating packer. Shut-in annulus loaded with 2% KCL.
3. Rig up and run gamma ray/temperature logs.
4. Pump 2% KCL down tubing until formation is loaded.
5. Perform 24,000 gallon acid fracture at 20 BPM with a maximum surface pressure of 4,000 psi as follows:
  - a. Pump 4,000 gallons WF40 plus 1 ppg 100 mesh sand.
  - b. Pump 6,000 gallons 28% HCL tagged with 1#/1,000g radioactive sand.
  - c. Pump 4,000 gallons WF40 plus 1 ppg 100 mesh sand.
  - d. Drop 800# salt diverting plug.
  - e. Repeat steps a thru d twice.
  - f. Pump 4,000 gallons WF40 plus 1 ppg 100 mesh sand.
  - g. Pump 6,000 gallons 28% HCL tagged with 1#/1,000g radioactive sand.
  - h. Pump 4,000 gallons WF40 plus 1 ppg 100 mesh sand.
  - i. Flush to bottom with 2% KCL.

NOTE: Treating fluids should contain the following additives:

- 28% HCL to contain 1,000 gallons
  - 3 gallons A200 inhibitor
  - 2 gallons W53 nonemulsifier
  - 1 gallon J321 friction reducer
- WF40 to contain per 1,000 gallons

- 40 pounds J347 gel
  - 2 gallons F75 surfactant
  - 2 pounds J297 breaker
  - 167 pounds M117 kcl (2%)

Blocking agent to contain per 100 gallons WF40:  
100# J66 rock salt; total block = 2,400#

6. Obtain ISIP, 5 minute SIP, and 10 minute SIP.
7. Run gamma ray/temperature logs.
8. Allow well to clean up & then flow test for two hours.
9. Release packers and pull out of hole and/or reset over the next zone and repeat Steps 2 thru 8.
10. Run production packer and tubing.
11. Allow well to flow until it cleans up, then shut-in. Run two 72 hour clocks and BHP bombs and flow test as follows:
  - a. Flow well a minimum of 12 hours and allow to stabilize at a maximum rate for Four Point Test.
  - b. Change choke sizes to smaller size 3 times to obtain the other three points on the Four Point Test. Run all test for the EXACT same amount of time (min. of 1 hour each).
  - c. Shut-in well for 24 hour build up test.
  - d. Pull out of hole with bombs, and send results to Division Office.
12. Put well on production and report test results to Division Office for thirty (30) days.

NOTE: Data to be reported will be as follows:

Tubing Pressure  
Casing Pressure  
Choke Size  
Gas Rates  
Oil Rates  
Water Rates



**OPERATOR'S CERTIFICATE OF COMPLIANCE AND AUTHORIZATION  
TO TRANSPORT OIL OR GAS FROM LEASE**

Federal, State or Indian Lease Number. or lessor's name, if fee lease NUG 8702-1116	Field Black Rock	Reservoir Paradox
Survey or Sec-Twp-Rge 21-40N-29E	County Apache	State Arizona
Operator Chuska Energy Company		
ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO:		
Street 315 N. Behrend	City Farmington	State New Mexico 87401
Above named operator authorizes (name of transporter) Western Gas, Ltd. (as agent for El Paso Natural Gas)		
Transporter's street address P. O. Box 70	City Kirtland	State New Mexico 87417
Field address		
Oil, condensate, gas well gas, casinghead gas		
To transport 100	% of the Gas	from said lease.
OTHER GATHERERS TRANSPORTING FROM THIS LEASE ARE AS FOLLOWS:		
Name of gatherer	% transported	Product transported
Gary Energy Co.	100	Condensate
Indicate whether or not this certificate is for a new lease. If not a new lease, indicate whether or not it is a change of operator, change of lease name, change of gatherer, or a consolidation or subdivision of leases and give effective date of change.  New Lease		

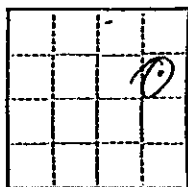
The undersigned certifies that the rules and regulations of the State of Arizona Oil & Gas Conservation Commission have been complied with in drilling and producing operations on this lease, except as noted above, and that the above transporter is authorized to transport the above specified percentage of the allowable oil or gas produced from the above described property, and that this authorization will be valid until further notice or until cancelled by the State of Arizona Oil & Gas Conservation Commission.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Production Manager of the Chuska Energy Company (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date 9-13-89 Signature John C. Alexander  
Date approved: 9/20/89  
STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION  
By: [Signature]  
Permit No. 559

STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION  
Operator's Certificate of Compliance & Authorization to  
Transport Oil or Gas from Lease  
File Two Copies

Form 9-598b



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
**INDIVIDUAL WELL RECORD**

FOR U.S. GOVERNMENT USE ONLY

Sec. 21

T. 40-N

R. 29-E

G&amp;SR Mer.

INDIAN LAND:

Date Oct. 15, 1971

Ref. No. \_\_\_\_\_

Reservation Navajo Tribal State Arizona14-20-0603-1522 County ApacheLessee Owned by Navajo tr 1-24-77 Field WildcatOperator Cities Service Oil Co. District FarmingtonWell No. 1 Monsanto-Navajo "A" Subdivision SR1 NELocation 1980 feet from north and 1050 feet from east lines of sectionDrilling approved June 22, 1971 Well elevation 6383 gl feetDrilling commenced June 30, 1971 Total depth 6111 PB 5985 feetDrilling ceased July 30, 1971 Initial production 7400 NGFPDCompleted for production Aug. 29, 1971 Gravity A. P. I. \_\_\_\_\_

Abandonment approved \_\_\_\_\_, 19\_\_\_\_ Initial R. P. \_\_\_\_\_

Geologic Formations		Productive Horizons		Contents
Surface	Lowest tested	Name	Depths	
	<u>Miss. Dolomite</u>	<u>Pennsylvanian</u>	<u>5553-5660</u>	<u>Gas</u>

**WELL STATUS**

YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1971						Drg		PGW				
1976			Shut in									

REMARKS Geol. Tops: De Chelly 2738' E.L. Barker Creek 5478' E.L.  
Organ Rock 3102' " Molas 5779' "  
Cutler 3691' " Miss. Lime 5870' "  
Hermosa 4442' " " Dolomite 5940' "  
Revert Creek 5178' "



## United States Department of the Interior

### GEOLOGICAL SURVEY

P. O. Box 959  
Farmington, New Mexico 87401

June 22, 1976

#### Memorandum

To: Oil and Gas Supervisor, Southern  
Rocky Mountain Area

From: District Engineer, Farmington, New Mexico

Subject: Termination, Nav. Trib. leases 14-20-0603-1522 and  
1523

The subject leases have expired by their own terms as of October 1973. Each lease has a well shut-in pending decision by the Navajo Tribe as to their ultimate disposition; that is, to either require plugging or sell intact on a lease sale.

It is the opinion of this office that the wells, by virtue of remoteness from a pipeline and vacant acreage will not be produced for a number of years if at all. Therefore, in the interest of safety and fairness to the liabilities of the companies involved recommendations should be made to the Navajo Tribe that these wells be plugged and abandoned, and operator allowed to recover their equipment.

It should be pointed out that such plugging can be accomplished without damage to the producing formation as well as eliminate the possibility of any damage or vandalism resulting in injuries or loss of gas.

*P. T. McGrath*  
P. T. McGrath

24 January 1975

RECEIVED

JAN 28 1975

U. S. GEOLOGICAL SURVEY  
FARMINGTON, N. M.

Mr. Ted Boston  
Cities Service Oil Company  
Cities Service Bldg.  
100 West 7th Street  
Box 300  
Tulsa, Oklahoma

Dear Mr. Boston:

Recently Mr. Thomas Lynch, Realty Officer, Real Property Management of the Bureau of Indian Affairs wrote your offices stating that Leases 14-20-063-1522, 14-20-063-1523, and 14-20-063-1553 which were jointly held by Monsanto Company and Cities Service Oil Company had expired on their own terms. He also stated that this lease cancellation did not relieve the company of certain obligations stated in the leases such as the plugging of the shut in wells.

At the present time, the Navajo Tribe is considering various courses of action in regard to the "shut-in" wells located upon these leases. The Office of Minerals Development, Navajo Tribe is requesting that these shut-in wells be left unplugged until such time that a decision has been made in regard to possible future development. It is also requested that all casing, equipment and structures of any well capable of producing be left intact as provided in the leases.

Thank you for your cooperation in this matter.

Sincerely,

*Robert F. Schryver*  
Robert F. Schryver, Director  
OFFICE OF MINERALS DEVELOPMENT

RFS/lw

cc: Peter MacDonald, Chairman, Navajo Tribal Council  
Paul Eckstein, Legal Counsel, Brown, Vlassis & Bain  
Thomas Lynch, Realty Officer, Bureau of Indian Affairs  
Phil McGrath, U.S.G.S. Farmington, New Mexico



THE NAVAJO NATION  
WINDOW ROCK, NAVAJO NATION (ARIZONA) 86515

MAR 25 1977

PETER MACDONALD  
CHAIRMAN, NAVAJO TRIBAL COUNCIL

WILSON C. SKEET  
VICE CHAIRMAN, NAVAJO TRIBAL COUNCIL

John Boka,  
Acting Assistant Area Director  
U.S. Department of the Interior  
Bureau of Indian Affairs  
Navajo Area Office  
Window Rock, Arizona 86515

Dear Mr. Boka:

In response to your letter of 11 February 1977, Cities Service Oil Company is hereby released from its responsibility to plug and abandon the following three gas wells:

- (1) Cities Service Oil Company, Monsanto-Navajo "A" #1 well located 1980' FNL and 1050' FEL, Section 21, 40N-29E, Apache County, Arizona (BIA No. 14-20-0503-1522).
- (2) Cities Service Oil Company, Monsanto-Navajo "C" #1 well located 2350' FNL and 2290' FEL, Section 16, 40N-29E, Apache County, Arizona (BIA No. 14-20-0603-1553)
- (3) American Fuels Corp., Navajo "AC" #1 well located 490' FNL and 500' FEL, Section 17, 40N-29E, Apache County, Arizona (BIA No. N00-C-14-20-3814.

It is understood that all three wells are unplugged and that all equipment in connection therewith is intact.

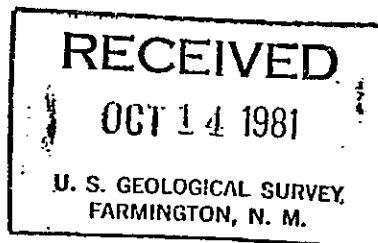
Sincerely,

*Wilson C. Skeet*  
Peter MacDonald, Chairman  
The Navajo Tribe

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MAR 28 1977

Area Branch of  
Real Property Mgmt.





IN REPLY REFER TO:  
ARPM/322

## United States Department of the Interior

BUREAU OF INDIAN AFFAIRS

Navajo Area Office  
Window Rock, Arizona 86515

MAR 25 1977

*Rec'd 10-14-81*

Cities Service Oil Co.  
P. O. Box 1919  
Midland, Texas 79701

Gentlemen:

Pursuant to your request dated January 24, 1977, and the Navajo Tribe's letter dated January 24, 1975, you are relieved of any further responsibility and liability to plug and abandon the "A" #1 Well under expired lease No. 14-20-0603-1522, the "C" #1 well under expired lease No. 14-20-0603-1553, and the "AC" #1 well under expired lease No. 14-20-0603-3814.

The release of responsibility is effective January 24, 1977. This will allow the Navajo Tribe to assume responsibility for the wells as they requested.

A copy of this letter is being sent to the U. S. Geological Survey for their information and records.

Sincerely yours,

*John J. Bokan*

ACTING  
ASSISTANT

Area Director



CITIES SERVICE OIL COMPANY



Box 1919  
Midland, Texas 79701  
Telephone (915) 684-7131

January 24, 1977

United States Department of Interior  
Bureau of Indian Affairs  
Navajo Area Office  
Window Rock, Arizona 86515

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OCT 14 1981

U. S. GEOLOGICAL SURVEY  
FARMINGTON, N. M.

REPORT
ABSTRACT
MINERALS
DRILLING
LEASING
R/W
BR. SEC.
FILE

ATTENTION: Mr. Thomas Lynch, Realty Specialist  
Real Property Management

- Re: (1) Cities Service Oil Company, Monsanto-Navajo "A" #1 well located 1980' FNL and 1050' FEL Section 21 - 40N-29E, Apache County, Arizona. (Your No. 14-20-0603-1522 and our 07X6-0200109)
- (2) Cities Service Oil Company, Monsanto-Navajo "C" #1 well located 2350' FNL and 2290' FWL Section 16 - 40N-29E, Apache County, Arizona. (Your No. 14-20-0603-1553 and our 07X6-0200104)
- (3) American Fuels Corp., Navajo "AC" #1 well located 490' FNL and 500' FEL Section 17 - 40N-29E, Apache County, Arizona. (Your No. N00-C-14-20-3814 and our 07X6-0200110)

Gentlemen:

Cities Service Oil Company drilled its Navajo "A" and "C" No. 1 wells, more fully set out in (1) and (2) above. These two wells were completed as wells capable of producing gas; however, our leases expired before we were able to obtain a pipe-line connection. Under a farmout contract from Cities Service Oil Company and Monsanto Company, American Fuels Corp. drilled their Navajo "AC" No. 1 well, which apparently was capable of producing, according to their production test on October 4, 1973. The American Fuels Navajo "AC" No. 1 well is located on an existing and valid lease owned jointly between Cities Service Oil Company and Monsanto Company.

By letter dated January 24, 1975, Mr. Robert F. Schryver, Director, Office of Minerals Development, advised they were considering several courses of action relative to the "A" & "C" No. 1 wells. He further requested us to leave these wells unplugged and leave all equipment in connection therewith intact until a decision was reached. We have abided by this request to the present time. Inasmuch as a considerable amount of time has elapsed since

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JAN 26 1977

-2-

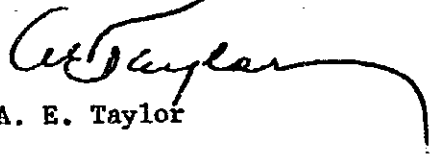
this request, two of the leases have expired on which two of the wells were located and in view of anticipated benefits of these three wells to the Navajo people, we request one of the following:

1. Notification from the appropriate authority for the Navajo Tribe that they will take over the "A", "C" and "AC" No. 1 wells and furnish Cities Service Oil Company and Monsanto Company with a letter or appropriate release of all responsibility and liability for these wells.
2. Authorizations from the appropriate authority for the Navajos to properly plug these wells.

We respectfully request an early decision and consummation of this matter.

Very truly yours,

CITIES SERVICE OIL COMPANY

  
A. E. Taylor

AET:lh



CITIES SERVICE OIL COMPANY



Box 1919  
Midland, Texas 79701  
Telephone (915) 684-7131

February 23, 1977

United States Department of Interior  
Bureau of Indian Affairs  
Navajo Area Office  
Window Rock, Arizona 86515

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OCT 14 1981

U. S. GEOLOGICAL SURVEY  
FARMINGTON, N. M.

ATTENTION: Mr. Thomas Lynch, Realty Specialist  
Real Property Management

- Re: (1) Cities Service Oil Company, Monsanto-Navajo "A" #1 well located 1980' FNL and 1050' FEL Section 21 - 40N-29E, Apache County, Arizona. (Your No. 14-20-0603-1522 and our 07X6-0200109)
- (2) Cities Service Oil Company, Monsanto-Navajo "C" #1 well located 2350' FNL and 2290' FWL Section 16 - 40N-29E, Apache County, Arizona. (Your No. 14-20-0603-1553 and our 07X6-0200104)
- (3) American Fuels Corp., Navajo "AC" #1 well located 490' FNL and 500' FEL Section 17 - 40N-29E, Apache County, Arizona. (Your No. N00-C-14-20-3814 and our 07X6-0200110)

Gentlemen:

As previously discussed and more fully set out in my letter of January 24, 1977, there has been a considerable delay in receiving a decision as to the disposition of captioned wells. I shall appreciate your furnishing me with a decision as to one of the alternatives set out in my letter of January 24, 1977.

Your cooperation in this matter will be greatly appreciated.

Very truly yours,

CITIES SERVICE OIL COMPANY

*A. E. Taylor*  
A. E. Taylor

AET:lh

RECEIVED

FEB 28 1977

Form 9-330  
(Rev. 5-63)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE\*

(See other instructions on reverse side)

Navajo Tribal Contract

Form approved.  
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG\*

1a. TYPE OF WELL: OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> DRY <input type="checkbox"/> Other <input type="checkbox"/>		1b. TYPE OF COMPLETION: NEW WELL <input checked="" type="checkbox"/> WORK OVER <input type="checkbox"/> DEEP-EN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESER. <input type="checkbox"/> Other <input type="checkbox"/>																			
2. NAME OF OPERATOR CITIES SERVICE OIL COMPANY		3. ADDRESS OF OPERATOR P.O. BOX 69, Hobbs, N.M. 88240																			
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements) At surface 1900' FNL & 1050' FEL Sec. 21-T40N-R29E At top prod. interval reported below Unknown At total depth Unknown		5. U.S. GEOLOGICAL SURVEY FARMINGTON, N. M.																			
14. PERMIT NO. 559		15. DATE ISSUED 6-21-71																			
16. DATE SPUNDED 6-30-71		17. DATE T.D. REACHED 7-29-71																			
18. DATE COMPL. (Ready to prod.) 8-29-71		19. ELEVATIONS (DF, RKB, RT, OR, ETC.) 6383 GR																			
20. TOTAL DEPTH, MD & TVD 6111		21. PLUG BACK T.D., MD & TVD 5985																			
22. IF MULTIPLE COMPL., HOW MANY?		23. INTERVALS DRILLED BY 0-6111																			
24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD) 5553-5577 Pennsylvanian 5653-5660 Pennsylvanian		25. WAS DIRECTIONAL SURVEY MADE No																			
26. TYPE ELECTRIC AND OTHER LOGS RUN Borehole Compensated Sonic Log-Gamma Ray Perforating Depth Control, Dual Induction-Laterlog, Proximity Log-Microlog, Sidewall Neutron Porosity		27. WAS WELL CORED No																			
28. CASING RECORD (Report all strings set in well)		29. LINER RECORD																			
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32. PRODUCTION		33. TEST WITNESSED BY																			
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DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)																			
8-27-71	Flowing	Shut in																			
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) Well shut-in waiting for pipeline connection.		35. LIST OF ATTACHMENTS Electric logs																			
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.		37. SIGNATURE AND TITLE OF ORIGINAL SIGNER AL D. ROBERTSON Dist. Admin. Supervisor																			
38. DATE 9-7-71		39. TEST WITNESSED BY El Paso Natural Gas Co.																			

\*(See Instructions and Spaces for Additional Data on Reverse Side)

# INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 33.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments. Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

FORMATION		TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	GEOLOGIC MARKERS		NEAR. DEPTH	TRUE VERT. DEPTH
Akiah Lime	5060	5107		DST #1. No water cushion. 5/8" bottom choke. Opened for 15 min preflow, strong blow gas in 5 min. Closed in for 30 min. Opened tool for 50 min flow period. Flowed gas at rate of 318 MCFD on 5/8" choke W/25 psi flow pressure. Closed tool for 90 min FSIP. Recovered one bbl. gas cut drilling mud W/rainbow of oil in drill pipe. Pressure on 15 min preflow 53# to 107#. FSIP 1418 (90 min). IFP 80#, FFP 80# (90 min). FSIP 615 (90 min.). BHT 115. MCF (in & out) 2462.	Permian Dechelly	2738		
					Organ Rock	3102		
					Cutler	3691		
					Penn Hermosa	4442		
					Ismay	5036		
					Desert Creek	5178		
					Akiah	5322		
					Barker Creek	5478		
					Molas	5779		
					Miss. Lime	5870		
					Miss. Dolomite	5940		
					T.O.	6111		
Barker Creek	5195	5221		DST #2. No water cushion. 3/4" bottom choke. 5/8" top choke. Tool opened for 15 min preflow with weak blow. Shut in for 30 min FSIP, then opened well for 60 min flow period. Weak blow throughout test. No surface pressure. Shut in for 60 min FSIP. Recovered 30' gas cut mud W/slight rainbow of oil. Preflow 53 psi.				

(continued - see attachment)

U.S. GOVERNMENT PRINTING OFFICE: 1963-O-360308

871-233

June 26, 1972

Re: Monsanto-Navajo A-1  
Section 21- T40N-R29E  
Apache County

FORMATION TOPS FROM MR. CLIFF ROBERTSON

Permian Dechelly	2738
Organ Rock	3102
Cutler	3691
Penn. Hermosa	4442
Ismay	5036
Desert Creek	5178
Akah	5322
Barker Creek	5478
Molas	5779
Miss - Lime	5870
Miss Dolo	5940
T.D.	6111

Form 9-331  
(May 1963)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE\*  
(Other instructions on reverse side)

Navajo Tribal Contract

Form approved  
Budget Bureau No. 42-R1424

5. LEASE DESIGNATION AND SERIAL NO.

14-20-6003-1522

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

Navajo 03-2390-01

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

Monsanto-Navajo A

9. WELL NO.

1

10. FIELD AND POOL, OR WILDCAT

Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA

21-T40N-R29E

12. COUNTY OR PARISH

Apache

13. STATE

Arizona

SUNDRY NOTICES AND REPORTS ON WELLS  
(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT--" for such proposals.)

1. OIL WELL ☒ GAS WELL ☐ OTHER ☐

2. NAME OF OPERATOR

CITIES SERVICE OIL COMPANY

3. ADDRESS OF OPERATOR

P.O. Box 69, Hobbs, New Mexico 88240

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*  
See also space 17 below.)  
At surface

1980 FNL and 1050 FEL of Sec. 21-T40N-R29E, Apache County, Arizona

14. PERMIT NO.

559

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

6383 GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

(Other)

PULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON\*

CHANGE PLANS

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other)

REPAIRING WELL

ALTERING CASING

ABANDONMENT\*

Well Completion Date

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

TD 6111, PBTD 6083 Mississippi, 7" at 6111. Acidized Miss. Dolomite perfs 6014-6020 with 500 gallons 15% HCL. Max. 2200 psi, treated at 1 1/2 B/M at 600 psi, ISIP vacuum. Total load to recover 42 bbls water. Swabbed all load plus 75 bbls of formation water in 6 hours. No oil. No gas. Ran Baker cast iron bridge plug and set on wire line at 5995' to plug off Miss. Dolomite perfs. Dumped 2 sacks of cement on top of plug from 5995' to 5985'. Perf 8 -- 0.50" holes in Pennsylvanian Limestone 5653, 5654, 5655, 5656, 5657, 5658, 5659 and 5660. Ran RTTS on 2 3/8" eue tubing and set at 5640'. Acidized Penn Lino perfs with 4000 gallons 15% HCL with one gallon inhibitor and 2 gals. surfactant per 1000 gals acid. Max. 2700 psi. Treated at 4 1/2 B/M at 2500 psi. Total load 122 bbls water. ISIP vacuum. Swabbed 7 bbls load water in 1 hour. Well started flowing. Cleaned up to pit for 2 hours then turned through test equipment for 5 hour test. Flowed at rate of: 2.54 MMCFD, 20/64" choke, FTP 3100 psi; 3.40 MMCFD, 25/64" choke, FTP 975 psi. Shut in at 11 P.M. 8-8-71 when surface equipment malfunctioned. 15 min SITP 1300 psi. Released RTTS and pulled out of hole. Ran Halliburton retrievable bridge plug on 2 3/8" eue tubing and set at 5615'. Displaced sand on top of bridge plug from 5615' to 5606'. Tested bridge plug to 700 psi. Held okay. Pulled out of hole. Perforated 7 - 0.50" holes in Pennsylvanian Dolomite 5553, 5557, 5573, 5574, 5575, 5576, 5577. Ran RTTS on 2 3/8" eue tubing and set at 5511' to test Penn Dolomite zone. Swabbed dry recovering 20 bbls load water in 1 hour. Acidized with 2000 gals 15% HCL. Break down 1800 psi at 2 B/M. Treated at 3 1/2 B/M at 1700--2000 psi. Max 2000 psi, ISIP 1100 psi, 15 min SIP 900 psi. Total load 72 bbls water. Swabbed 20 bbls load water in 1 hour. Swabbed 52 bbls load water lowering fluid

18. I hereby certify that the above is a true and correct copy of the original signed by

SIGNED D. D. ROBERTSON

TITLE Dist. Admin. Supervisor

DATE 9-3-71

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_  
RECEIVED

559

SEP 10 1971

\*See Instructions on Reverse Side

O & G CONS. COMM.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEYSUBMIT IN DUPLICATE\*  
(See other in-  
structions on  
reverse side)

## Navajo Tribal Contract

Form approved.  
Budget Bureau No. 42-R355.5.

## WELL COMPLETION OR RECOMPLETION REPORT AND LOG\*

1a. TYPE OF WELL: OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> DRY <input type="checkbox"/> Other _____		5. LEASE DESIGNATION AND SERIAL NO. 14-20-0603-1522	
b. TYPE OF COMPLETION: NEW WELL <input checked="" type="checkbox"/> WORK OVER <input type="checkbox"/> DEEP-EN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> Other _____		6. IF INDIAN, ALLOTTEE OR TRIBE NAME Navajo #03-2390-01	
2. NAME OF OPERATOR CITIES SERVICE OIL COMPANY		7. UNIT AGREEMENT NAME	
3. ADDRESS OF OPERATOR P.O. BOX 69, Hobbs, N.M. 88240		8. FARM OR LEASE NAME Monsanto-Navajo A	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface 1980' FNL & 1050' FEL Sec. 21-T40N-R29E At top prod. interval reported below Unknown At total depth Unknown		9. WELL NO. 1	
14. PERMIT NO. 559		13. STATE Arizona	
15. DATE SPUNDED 6-30-71		12. COUNTY OR PARISH Apache	
16. DATE T.D. REACHED 7-29-71		18. ELEVATIONS (DP, RKB, RT, GR, ETC.)* 6383 GR	
17. DATE COMPL. (Ready to prod.) 8-29-71		19. ELEV. CASINGHEAD 6383	
20. TOTAL DEPTH, MD & TVD 6111		21. PLUG BACK T.D., MD & TVD 5985	
22. IF MULTIPLE COMPL., HOW MANY*		23. INTERVALS DRILLED BY ROTARY TOOLS 0-6111 CABLE TOOLS --	
24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* 5553-5577 Pennsylvanian 5653-5660 Pennsylvanian		25. WAS DIRECTIONAL SURVEY MADE No	
26. TYPE ELECTRIC AND OTHER LOGS RUN Borehole Compensated Sonic Log-Gamma Ray Perforating Depth Control, Dual Induction Laterlog, Proximity Log-Microlog, Sidewall Neutron Porosity		27. WAS WELL CORED No	
28. CASING RECORD (Report all strings set in well)		CEMENTING RECORD	
Casing Size		HOLE SIZE	
9 5/8"		12 1/4"	
Weight, lb./ft. 32.3#		Depth set (MD) 912	
23 & 26#		6111	
		8 3/4"	
		375 sax	
20. LINER RECORD		30. TUBING RECORD	
SIZE		SIZE	
TOP (MD)		DEPTH SET (MD)	
BOTTOM (MD)		PACKER SET (MD)	
SACKS CEMENT*		SCREEN (MD)	
		2 3/8" OD	
		5531	
		5522	
		Ret. Pkr. @ 5198	
31. PERFORATION RECORD (Interval, size and number)		32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.	
7 - 1/2" perforations @ 5553, 5557, 5573, 5574, 5575, 5576, & 5577		DEPTH INTERVAL (MD)	
8 - 1/2" perforations @ 5654, 5655, 5656, 5657, 5658, 5659 & 5660		5553-5577	
		AMOUNT AND KIND OF MATERIAL USED	
		2000 gal. 15% HCL &	
		10000 gal. 28% HCL	
		4000 gal. 15% HCL	
33. PRODUCTION		WELL STATUS (Producing or shut-in)	
DATE FIRST PRODUCTION 8-27-71		Shut in	
PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) Flowing			
DATE OF TEST 8-27-71		HOURS TESTED 10 (4 point test)	
CHOKE SIZE test		PROD'N. FOR TEST PERIOD --	
OIL—BBL. --		GAS—MCF. --	
WATER—BBL. --		GAS-OIL RATIO --	
FLOW TUBING PRESS. --		CASING PRESSURE --	
CALCULATED 24-HOUR RATE --		OIL—BBL. 2	
		GAS—MCF. 7.4 MMCFD	
		WATER—BBL. --	
		OIL GRAVITY-API (CORR.) 52	
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) Well shut-in waiting for pipeline connection.		TEST WITNESSED BY El Paso Natural Gas Co.	
35. LIST OF ATTACHMENTS Electric logs			
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records			
ORIGINAL SIGNED SIGNED R. D. ROBERTSON		TITLE Dist. Admin. Supervisor	
		DATE 9-7-71	

\*(See Instructions and Spaces for Additional Data on Reverse Side)

659 559

## INSTRUCTIONS

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**Item 29:** "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

**Item 33:** Submit a separate completion report on this form for each interval to be separately produced. (See instruction for Items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES: SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF: CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES			38. GEOLOGIC MARKERS			
FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	MEAS. DEPTH	TRUE VERT. DEPTH
Akah Lime	5060	5107	<b>DSI #1.</b> No water cushion. 5/8" bottom choke. Opened for 15 min preflow, strong blow gas in 5 min. Closed in for 90 min. Opened tool for 90 min flow period. Flowed gas at rate of 318 MCFD on 5/8" choke W/25 psi flow pressure. Closed tool for 90 min FSIP. Recovered one bbl. gas cut drilling mud W/rainbow of oil in drill pipe. Pressure on 15 min preflow 53# to 107#. ISIP 1418 (90 min), IFP 80#, FFP 80# (90 min), FSIP 615 (90 min.), BHT 115, MCP (in & out) 2462.	Permian Dechelly Organ Rock Cutler Penn Hermosa Ismay Desert Creek Akah Barker Creek Molas Miss. Lime Miss. Dolomite T.D.	2738 3102 3691 4442 5036 5178 5322 5478 5779 5870 5940 6111	
Barker Creek	5195	5221	<b>DSI #2.</b> No water cushion. 3/4" bottom choke, 5/8" top choke. Tool opened for 15 min preflow with weak blow. Shut in for 30 min ISIP, then opened well for 60 min flow period. Weak blow throughout test. No surface pressure. Shut in for 60 min FSIP. Recovered 30' gas cut mud W/slight rainbow of oil. Preflow 53 psi.			

(continued - see attachment)

Cities Service Oil Company  
Monsanto-Navajo A #1

Formation	Top	Bottom	Summary
			<u>DST #2 Continued.</u> 90 min ISIP 373 psi, I.F. 53 psi, F.F. 53 psi, 60 min FSIP 320 psi, MCP in & out 2489 psi, BHT 108° F.
Atoka	5250	5375	<u>DST #3.</u> No water cushion, 3/4" bottom choke, 5/8" top choke. Tool opened for 15 min preflow w/ weak blow. Closed for 90 min ISIP. Re-opened for 90 min flow period. Gas to surface in 25 min. W/good blow decreasing to weak blow. No surface pressure. Closed tool for 90 min FSIP, Recovered 300' of 41 gravity oil and 300' of heavy oil and gas cut drilling mud. 15 min preflow 80 psi--107 psi; 90 min ISIP 2301 psi (Incorrect); I.F. 134 psi; F.F. 214 psi; 90 min FSIP 1086 psi, MCP (in & out) 2516 psi, BHT 120° F.
L. Pinkerton Trail	5545	5670	<u>DST #4.</u> No water cushion, 3/4" bottom choke, 3/4" top choke, opened tool for 15 min preflow, flowed with strong blow. Gas to surface in 4 minutes. Closed tool for 90 min ISIP. Re-opened with strong blow increasing to 550 psi max. surface pressure on 3/4" choke, decreasing to 410 psi at conclusion of test. Gas rate 5.945 MMCFD. Closed tool for 90 min FSIP. Recovered 300' of heavy gas cut mud w/trace of condensate. 15 min preflow 535 psi,--562 psi; 90 min ISIP 1525 psi, I.F. 481 psi, F.F. 669 psi, 90 min FSIP 1499 psi, BHT 120° F. MCP (in & out) 2651 psi.
Upper-Miss	5948	6000	<u>DST #5.</u> No water cushion, 3/4" bottom choke, 3/4" top choke. Opened tool for 15 min preflow. No blow. Closed tool for 60 min ISIP. Re-opened for 60 min flow period. No blow. Closed tool for 60 minute FSIP. Recovered 5' of drilling mud. 15 min preflow 53 psi--133 psi, 60 min ISIP 1379 psi, I.F. 53 psi, F.F. 80 psi, 60 min FSIP 347 psi, MCP in 2992psi, MCP out 2886 psi, BHT 132° F.

REC'D  
SEP 11 1960  
O & G FORD COMPANY



level to 5200'. Well flowing gas TSTM. Shut in for 1 hour. Swabbed 1/10 bbl water with trace of oil. Shut in overnite. 1 min SIP 20 psi, 30 min SIP 50 psi, 1 hour SIP 80 psi. Acidized Penn Dolo perfs with 10000 gals 28% HCL. Max 3200 psi, AIR 6.5 B/M at 2900 psi. ISIP vacuum. 320 BLW to recover. Swabbed 80 bbls load water in 2 hours. Well started flowing. Flowed at rate of: 3.44 MMCFD, 30/64" choke, FTP 875 psi. Well still not cleaned up. 220 BLW to recover. Shut in at 10:30 P.M. ISIP 1000 psi, 30 min SIP 1150 psi. Preparing to move retrievable bridge plug and set above existing perfs. 8 hour SITP 1325 psi. Flowed Penn Dolo zone 10 hours recovering 105 bbls load water. At conclusion of flow period, well producing at rate of 4.2 MMCFD. FTP 800 psi, 32/64" choke. 115 BLW to recover. Shut in at 6 P.M. 8-13-71. 15 min SIP 1300 psi. Caught R.B.P. and moved up hole and reset at 5300'. Circulated hole and tested R.B.P. to 1500 psi. Held okay. Pulled tubing and retrieving head. Perforated Penn Desert Creek zone with 5 -- 1/2" holes 5266, 5267, 5268, 5269, and 5270. Ran RTTS on 2 3/8" eue tubing and set at 5225. Swabbed 19 bbls load water in 2 hours lowering fluid level to 4900' from surface. No fluid coming in hole. Treated Penn Desert Creek perfs with 500 gallons HCA. Max 2150 psi, Rate 3 B/M at 2000 psi. Total load to recover 45 bbls water. ISIP 1550 psi, 10 min SIP 1400 psi. Bled well down. Swabbed well down to 5000' recovering all load water in 3 hours. Fluid coming into hole at rate of 1 bbl of oil per hour. Swabbed 4 bbls of 41 gravity oil in 4 hours. Shut in overnite. Swabbing at rate of 1 bbl fluid/hour (70% oil). Flowed 45 BLW in 1 hour. Well died. Swabbed 4 80 and 55 BLW in 6 hours. 43 BLW to recover. Treated Penn Desert Creek perfs with 4000 gal 15% HCL. Max. 3200 psi. AIR 4 1/2 B/M @ 2800 psi. ISIP 1500, 10 min SIP 1200. Flushed w/1000 gal treated water. Total load to recover 143 bbls. Swab testing. SITP 350 psi in 14 hours. Swabbed 4 80 and 5 BLW in 9 1/2 hrs. F.L. 5175' from surface. 28 BLW to recover. Chlorides 30300 PPM, PH 6.0. SITP 275 psi in 14 hours. Swabbed 4 80 and 5 BLW in 9 1/2 hrs. F.L. 5175' from surface. 23 BLW to recover. Chlorides 24240 PPM, PH 6.5. Pulled RTTS packer and retrievable bridge plug. Set Model 'D' Packer @ 5522 with Model 'F' (1.81 ID) seating nipple @ 5488 and Model 'L' sliding sleeve (1.87 ID) at 5454' and lock set packer @ 5198' (4000# on lock set). Run on 2 3/8" eue tubing. The sliding sleeve is closed. Swabbed 90 BLW from Penn Lime and Penn Dolomite perfs. Swabbed and flowed 250 BLW in 12 1/2 hrs. Flowing tubing pressure 200 psi on 1" choke at end of test period. Shut in overnight. SITP 600 psi in 30 min. 560 BLW to recover. SITP 1275 in 11 hrs. Flowed 326 BLW 3 bbls condensate in 21 hours. Volume at end of test period 3.76 MMCF on 1/2" choke, FTP 715 psi. Fluid rate 8.7 BLW/hr and 0.6 bbls condensate/hr. 234 BLW to recover. Flowed 12 bbls distillate and 60 bbls load water in 24 hrs, gas volume at end of test period 4.14 MMCFD on 1/2" choke. FTP 750 psi, 174 BLW to recover. Penn Barker Creek perfs 5653-5660 (Lime) and 5553-5577 (Dolomite). Tested Penn Barker Creek zone as follows: 10 hour SITP 1280 psi. Ran BHP bomb. Flowed well at 4 rates: 1st rate 12/64" choke, FTP 1247 psi, 1.01 MMCFD, no fluid. 2nd rate, 17/64" choke, FTP 1190 psi, 1.85 MMCFD, no fluid. 3rd rate, 21/64" choke, FTP 1098 psi, 2.62 MMCFD, 1 80, 1/2 BLW. 4th rate, 27/64" choke, FTP 876 psi, 3.36 MMCFD, 1 1/2 80, 2 BLW. Flow rates completed at 9:45 P.M. 8-27-71. Pulled BHP bomb 8-29-71. CAOF of Penn Barker Creek zone is 7.4 MMCFD. Slope 0.6531. Well shut in.

**ARIZONA OIL AND GAS CONSERVATION COMMISSION**  
**MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL**

Type Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special				Test Date 8-28-71		Well Name Monsanto-Navajo A	
Company Cities Service Oil Company				Connection --		Permit No. 559	
Pool Undesignated				Formation Pennsylvanian		Unit	
Completion Date 8-29-71		Total Depth 6111		Plug Back TD 5990		Elevation 6383 GR	
Farm or Lease Name Monsanto-Navajo A		Well No. 1		Sec. 21		Twp. 40N	
Csg. Size 7"		Wt. 23		d 6.366		Set At 6110	
Tbg. Size 2 3/8"		Wt. 4.7		d 2"		Set At 5531	
Type Well — Single — Bradenhead — G.G. or G.O. Multiple				Packer Set At 5522		County Apache	
Producing Thru Tubing		Reservoir Temp. °F 136 @ 5520		Mean Annual Temp. °F Approx 60		Baro. Pres. — P <sub>a</sub> 12.2	
L 5531		H 5531		Gg. 0.703		% CO <sub>2</sub> 2.85	
				% N <sub>2</sub> 8.32		% He	
				Prover		Meter Run 3"	
						Taps Flange	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Choke Orifice Size	Press. p.s.i.g.	Diff. h <sub>w</sub>	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	
1.	35 Hr. BHP						1511.2 psia			
1.	3"		2"	262	6	85	1474	69		
2.	3"		2"	263	20.5	92	1429	72		
3.	3"		2"	418	25	90	1364	75		
4.	3"		2"	420	40.5	85	1221	71		
5.										

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24-Hour)	$\sqrt{h_w P_m}$	Pressure P <sub>m</sub>	Flow Temp. Factor Ft.	Gravity Factor F <sub>g</sub>	Super. Factor, F <sub>spv</sub>	Rate of Flow Q, Mcfd
1.	21.32	40.50	274.2	0.9768	1.193	1.022	1028
2.	21.32	75.11	275.2	0.9706	1.193	1.021	1893
3.	21.32	103.71	430.2	0.9723	1.193	1.033	2649
4.	21.32	132.30	432.2	0.9768	1.193	1.034	3393
5.							

NO.	P <sub>r</sub>	Temp. °R	T <sub>r</sub>	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	0.412	545	1.50	0.958	—	—
2.	0.414	552	1.52	0.960	—	—
3.	0.647	550	1.51	0.937	—	—
4.	0.650	545	1.50	0.935	—	—
5.						

P <sub>c</sub> 1511.2 P <sub>c</sub> <sup>2</sup> 2283.7				$(1) \frac{P_c^2}{P_c^2 - P_w^2} = \frac{2283.7}{74.9}$		$(2) \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 7.2$	
NO.	P <sub>t</sub> <sup>2</sup>	P <sub>w</sub>	P <sub>w</sub> <sup>2</sup>	P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup>			
1.		1486.2	2208.8	74.9			
2.		1441.2	2077.0	206.7			
3.		1376.2	1893.9	389.8			
4.		1233.2	1520.8	762.9			
5.							

Absolute Open Flow 7400 Mcfd @ 15.025				Angle of Slope 0		Slope, n .577	
Remarks:							

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the **Brad Bennett** of the **Cities Service Oil** (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date 9-1-71 Signature *Brad Bennett*

**STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION**  
 Multipoint and One Point Back Pressure Tests for Gas Well  
 Form No. 18 (File two copies)

Form 9-331  
(May 1963)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE\*  
(Other instructions on reverse side)

NAVAJO TRIBAL CONTRACT

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

14-20-0603-1522

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

Navajo (Lse. #03-2390-01)

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

MONSANTO-NAVAJO "A"

9. WELL NO.

10. FIELD AND POOL, OR WILDCAT

WILDCAT

11. SEC. T. R. M. OR BLK. AND SURVEY OR AREA

SEC. 21-T40N-R29E

12. COUNTY OR PARISH

Apache

13. STATE

Arizona

1. OIL WELL ☒ GAS WELL ☐ OTHER ☐

2. NAME OF OPERATOR

CITIES SERVICE OIL COMPANY

3. ADDRESS OF OPERATOR

P.O. BOX 69, Hobbs, New Mexico 88240

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.)  
At surface

1980 FNL & 1050 FEL of Sec. 21-T40N-R29E, Apache County, Arizona.

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

6383 GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

(Other)

PULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON\*

CHANGE PLANS

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other)

REPAIRING WELL

ALTERING CASING

ABANDONMENT\*

Perforate, Acidize & Test

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

TD 6111, PBTD 6083 Mississippian, 7" at 6111, Miss. Dolomite perfs 6014-6020. Acidized Miss. Dolo. perfs with 500 gallons 15% MCA. Max 2200 psi, treated at 1 1/2 B/M at 600 psi, ISIP vacuum. Total load to recover 42 bbls water. Swabbed all load plus 75 bbls of formation water in 6 hours. Swabbing at rate of 20 bbls/hour. Fluid level 2800' from surface. No oil. No gas. Released RTTS and pulled out of hole. Ran Baker cast iron bridge plug and set on wire line at 5995' to plug off Miss Dolomite perfs. Dumped 2 sacks of cement on top of plug from 5995' to 5985'. Perforated 8 -- 0.50" holes in Pennsylvanian Limestone 5653, 5654, 5655, 5656, 5657, 5658, 5659 and 5660. Ran RTTS on 2 3/8" EUE tubing and set at 5640'. Swabbed 7 bbls load water in 1/2 hour. Well started flowing. Cleaned up to pit for 1 3/4 hours, then turned through test equipment for 3 hour test. FTP 150 psi on 32/64" choke. Gas rate at beginning of test 374 MCFD. Shut in at 10:15 P.M. 8-7-71. SITP in 1 minute was 400 psi, 5 min 500 psi, 10 min 650 psi, 15 min 850 psi, 20 min 940 psi, 25 min 1025 psi, 30 min 1120 psi and 35 min 1170 psi. Acidized Penn Lime perfs with 4000 gallons 15% HCL with one gallon inhibitor and 2 gallons surfactant per 1000 gallons acid. Max 2700 psi. Treated at 4 1/2 B/M at 2500 psi. Total load 122 bbls water. ISIP vacuum. Swabbed 7 bbls load water in 1/2 hour. Well started flowing. Cleaned up to pit for 2 hours then turned through test equipment for 5 hour test. Flowed at rate of: 2.54 MMCFD, 20/64" choke, FTP 1100 psi, 3.40 MMCFD, 25/64" choke, FTP 975 psi. Shut in at 11 PM 8-8-71 when surface equipment malfunctioned. 15 min SITP 1300. Recovered 45 bbls load water leaving 77 BLW to recover. (see attachment)

18. I hereby certify that the foregoing is true and correct

SIGNED

*C. Robertson*

TITLE

District Admin. Supervisor

DATE August 20, 1971

(This space for Federal or State office use)

APPROVED BY

CONDITIONS OF APPROVAL, IF ANY:

TITLE

DATE

RECEIVED

AUG 24 1971

O & G CONS. COMM.

\*See Instructions on Reverse Side

Monsanto-Navajo A #1 -- Page 2

Penn Lime perfs 5653-5660 (temporarily plugged off), Penn Dolomite perfs 5553-5577. Released RTTS and pulled out of hole. Ran Halliburton Retrievable Bridge Plug on 2 3/8" EUE tubing and set at 5615'. Displaced sand on top of bridge plug from 5615 to 5606. Tested bridge plug to 700 psi. Held okay. Perforated 7 -- 0.50" holes in Pennsylvanian Dolomite 5553, 5557, 5573, 5574, 5575, 5576, and 5577. Testing Penn Dolomite. Ran RTTS on 2 3/8" EUE tubing and set at 5511' to test Penn Dolomite zone. Swabbed dry recovering 20 bbls load water in 1 hour. Acidized with 2000 gallons 15% HCL. Break down 1800 psi at 2 B/M. Treated at 3 1/2 B/M at 1700 - 2000 psi. Max 2000 psi, ISIP 1100 psi, 15 min SIP 900 psi. Total load 72 bbls water. Back flowed 20 bbls load and died. Swabbed 52 bbls load water lowering fluid level to 5200'. All load recovered. Well flowing gas TSTM (est. 25 MCFD). Shut in for 1 hour. Fluid level raised 100' in hole. Swabbed 1/10 bbl water with trace of oil. Shut in overnite. 1 min SIP 20 psi, 30 min SIP 50 psi, 1 hour SIP 80 psi. 8 hour SITP 475 psi. Fluid level 2000' from surface. Made 1 run with swab recovering 4 bbls acid water with a trace of oil. Well flowed 1/2 hour and died. It was necessary to pull swab once per hour during 10 hour testing period, recovering an additional 3 bbls of acid water with a trace of oil. Well flowing gas TSTM. Estimated rate 25 MCFD. Shut well in. 1 min SIP 20 psi, 30 min SIP 55 psi, 90 min SIP 90 psi. Acidized Penn Dolomite perfs with 10000 gallons 28% HCL. Max 3200 psi, AIR 6.5 B/M at 2900 psi. ISIP vacuum, 320 BLW to recover. Swabbed 80 bbls load water in 2 hours. Well started flowing. Cleaned up to pit for 2 hours recovering 20 bbls load water then turned through test equipment for 4 hour test. Flowed at rate of: 3.44 MMCFD, 30/64" choke, FTP 875 psi. Well still not cleaned up. 220 BLW to recover. Shut in at 10:30 PM. ISIP 1000 psi, 30 min SIP 1150 psi. 8 hour SITP 1325 psi. Flowed Penn Dolo zone 10 hours recovering 105 barrels of load water. At conclusion of flow period, well producing at rate of 4.2 MMCFD. FTP 800 psi, 32/64" choke. 115 BLW to recover. Shut in at 6 PM 8-13-71. 15 min SIP 1300 psi. Killed well. Released RTTS and lowered to top of sand bridge at 5606. Tried to reverse sand off top of retrievable bridge plug but were not successful. No circulation. Made trip to lay down RTTS and run retrieving head. Round tripped tubing to remove sand plug. Used 200 additional barrels of fresh water to circulate sand off R.B.P. set at 5615. Caught R.B.P. and moved up hole and reset at 5300'. Circulated hole and tested R.B.P. to 1500 psi. Held okay. Pulled tubing and retrieving head. Perforated Penn Desert Creek zone with 5 -- 1/2" holes 5266, 5267, 5268, 5269, and 5270. Ran RTTS on 2 3/8" EUE tubing and set at 5225. Swabbed 19 bbls load water in 2 hours lowering fluid level to 4900' from surface. No fluid coming in hole. 915 bbls load water to recover. Treated Penn Desert Creek perfs with 500 gallons MCA. Max 2150 psi, Rate 3 B/M at 200 psi. Total load to recover 45 bbls water. ISIP 1550 psi, 10 min SIP 1400 psi, Bled well down. Swabbed well down to 5000' recovering all load water in 3 hours. Fluid coming into hole at rate of 1 bbl of oil per hour. Swabbed 4 bbls of 41 gravity oil in 4 hours. Swabbing at rate of 1 bbl fluid/hour (70% oil). Flowed 45 BLW in 1 hour. Well died. Swabbed 4 BO and 55 BLW in 6 hours. 43 BLW to recover. Treated Penn Desert Creek perfs with 4000 gal 15% HCL. Max 3200 psi. AIR 4 1/2 B/M @ 2800 psi. ISIP 1500, 10 min SIP 1200. Flushed W/1000 gal treated water. Total load to recover 143 bbls. Swab testing. SITP 375 psi in 14 hours. F.L. 5175' from surface. 33 BLW to recover. Influx rate 1/2 B.F. per hour, (30% oil). Swab testing. SITP 350 psi in 14 hours. Swabbed 4 BO and 5 BLW in 9 1/2 hours. F.L. 5175' from surface. 28 BLW to recover. Chlorides 30300 PPM PH 6.0.

RECEIVED

AUG 24 1971

O & G CONS. COMM.

August 11, 1971

Gentlemen;

We have received samples on the following well:

Cities Service Oil Co.  
# 1 Monsanto Navajo A  
1980/Fnl & 1050/Fel  
Sec. 21-40N-29E  
Apache Co, Arizona

Thank You,

*J. Ratcliff*  
Mrs. Jo Ratcliff, Mgr.

# 559

Form 9-331  
(May 1963)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE\*  
(Other instructions on re-  
verse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>	
2. NAME OF OPERATOR <b>CITIES SERVICE OIL COMPANY</b>	
3. ADDRESS OF OPERATOR <b>P.O. BOX 69, HOBBS, NEW MEXICO 88240</b>	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface <b>1980' FNL &amp; 1050' FEL of Sec. 21-T40N-R29E, Apache County, Arizona</b>	
14. PERMIT NO.	15. ELEVATIONS (Show whether OF, RT, OR, etc.) <b>6383 GR</b>

NAVAJO-TRIBAL CONTRACT

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO. <b>14-20-0603-1522</b>	
6. IF INDIAN, ALLOTTEE OR TRIBE NAME <b>NAVAJO (LIE #03-2399-51)</b>	
7. UNIT AGREEMENT NAME	
8. FARM OR LEASE NAME <b>MONSANTO-NAVAJO "A"</b>	
9. WELL NO. <b>1</b>	
10. FIELD AND POOL, OR WILDCAT <b>WILDCAT</b>	
11. SEC., T., R., M. OR BLM. AND SURVEY OR AREA <b>SEC. 21-T40N-R29E</b>	
12. COUNTY OR PARISH <b>APACHE</b>	13. STATE <b>ARIZONA</b>

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data			
NOTICE OF INTENTION TO:		SUBSEQUENT REPORT ON:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input checked="" type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input checked="" type="checkbox"/>	(Other) <input type="checkbox"/>	(Other) <input type="checkbox"/>
(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting and proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

It is now proposed to drill to a T.D. of 6111' and set and cement 7", 23-25', casing at this depth w/375 sacks of cement instead of drilling to a T.D. of 5700' and running 5 1/2" casing as proposed on the application for Permit to Drill.

18. I hereby certify that the foregoing is true and correct

SIGNED 3. D. ROBERTSON

TITLE Dist. Admin. Supervisor

DATE August 6, 1971

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

RECEIVED

AUG 10 1971

O & G CONS. COMM.

\*See Instructions on Reverse Side

Permit 559

Form 9-331  
May 1963

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE  
(Other instructions on reverse side)

NAVAJO-TRIBAL CONTRACT

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

14-20-0603-1522

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

NAVAJO (LSE. #63-2390-01)

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

NONSANTO-NAVAJO "A"

9. WELL NO.

1

10. FIELD AND POOL, OR WILDCAT

WILDCAT

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA

Sec. 21-T4N-R29E

12. COUNTY OR PARISH

APACHE

13. STATE

ARIZONA

1. OIL WELL ☒ GAS WELL ☐ OTHER ☐

2. NAME OF OPERATOR

CITIES SERVICE OIL COMPANY

3. ADDRESS OF OPERATOR

P.O. BOX 69, HONOLULU, NEW MEXICO 88240

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.)  
At surface

1900' FUL & 1050' FEL of Sec. 21-T4N-R29E, Apache County, Arizona.

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

6383 GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data:

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

(Other)

PULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON\*

CHANGE PLANS

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other)

REPAIRING WELL

ALTERING CASING

ABANDONMENT\*

(Other) DST's, Casing & Completion

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting and proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

TO 6111' Like PRTD 6083' Prep to acidize w/500 Gal. HCA.

DST #1: 5080-5107 Akah Lize. No water cushion. 5/8" bottom choke. Opened for 15 min preflow strong blow gas in 5 min. Closed in for 50 min ISIP. Opened tool for 90 min flow period. Flowed gas at rate of 318 MCFD on 5/8" choke with 25 psi flow press. Closed tool for 50 min FSIP. Recovered 1 bbl gas cut drilling mud w/rainbow oil in drill pipe. Press on 15 min preflow 53# to 107#. ISIP 1418 (90 min), IFP 60#, FFP 60# (90 min), FSIP 615 (90 min), BHT 115, MCP (in & out) 2462. DST No. 2: 5195-5221 (26') Barker Creek. No water cushion. 3/4" bottom choke, 5/8" top choke. Tool opened for 15 minute preflow with weak blow. Shut in for 90 minute ISIP, then opened well for 60 minute flow period. Weak blow throughout test. No surface pressure. Shut in for 60 minute FSIP. Recovered 30' gas cut mud with slight rainbow of oil. Preflow 53 psi, 90 Min. ISIP 373 psi, I.F. 53 psi, F.F. 53 psi, 60 Min. FSIP 320 psi, MCP in & out 2409 psi, BHT 108° F. DST No. 3: 5250-5375 (125') Akoka. No water cushion, 3/4" bottom choke, 5/8" top choke. Tool opened for 15 min preflow with weak blow. Closed for 90 min ISIP. Reopened for 90 minute flow period. Gas to surface in 25 minutes with good blow decreasing to weak blow. No surface pressure. Closed tool for 90 min FSIP. Recovered 300' of 41 gravity oil and 300' of heavy oil and gas cut drilling mud. 15 min preflow 80 psi -- 107 psi, 90 min ISIP 230 psi (uncorrected), I.F. 134 psi, F.F. 214 psi, 90 min FSIP 1086 psi, MCP (in & out) 2516 psi, BHT 120° F. DST No. 4: 5545-5670 (125') Lower Pinkerton Trail. No water cushion, 3/4" bottom choke, 3/4" top choke.

(Continued on attached page)

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE

District Admin. Supervisor

DATE August 6, 1971

(This space for Federal or State office use)

APPROVED BY

CONDITIONS OF APPROVAL, IF ANY:

TITLE

RECEIVED

AUG 10 1971

Permit 559

\*See Instructions on Reverse Side

0 & 0



CITIES SERVICE OIL COMPANY, Monsanto-Havale 'A' #1

Opened tool for 15 min preflow. Flowed with strong blow. Gas to surface in 4 minutes. Closed tool for 90 min ISIP. Reopened with strong blow increasing to 550 psi max. surface pressure on 3/4" choke, decreasing to 410 psi at conclusion of test. Gas rate 5.945 MMCFD. Closed tool for 90 min FSIP. Recovered 300' of heavy gas cut mud with trace of condensate. 15 min preflow 535 psi -- 562 psi, 90 min ISIP 1525 psi, I.F. 481 psi, F.F. 669 psi, 90 Min FSIP 1499 psi, BHT 120° F, MCP in & out 2651 psi. DST No. 5: 5948-6000 (52') Upper Mississippian. No water cushion, 3/4" bottom choke, 3/4" top choke. Opened tool for 15 min preflow. No blow. Closed tool for 60 min ISIP. Reopened for 60 min flow period. No blow. Closed tool for 60 minute FSIP. Recovered 5' drilling mud. 15 Min preflow 53 psi -- 133 psi, I.F. 1379 psi, F.F. 80 psi, 60 min FSIP 347 psi, MCP in 2992 psi, MCP out 2886 psi, BHT 132° F.

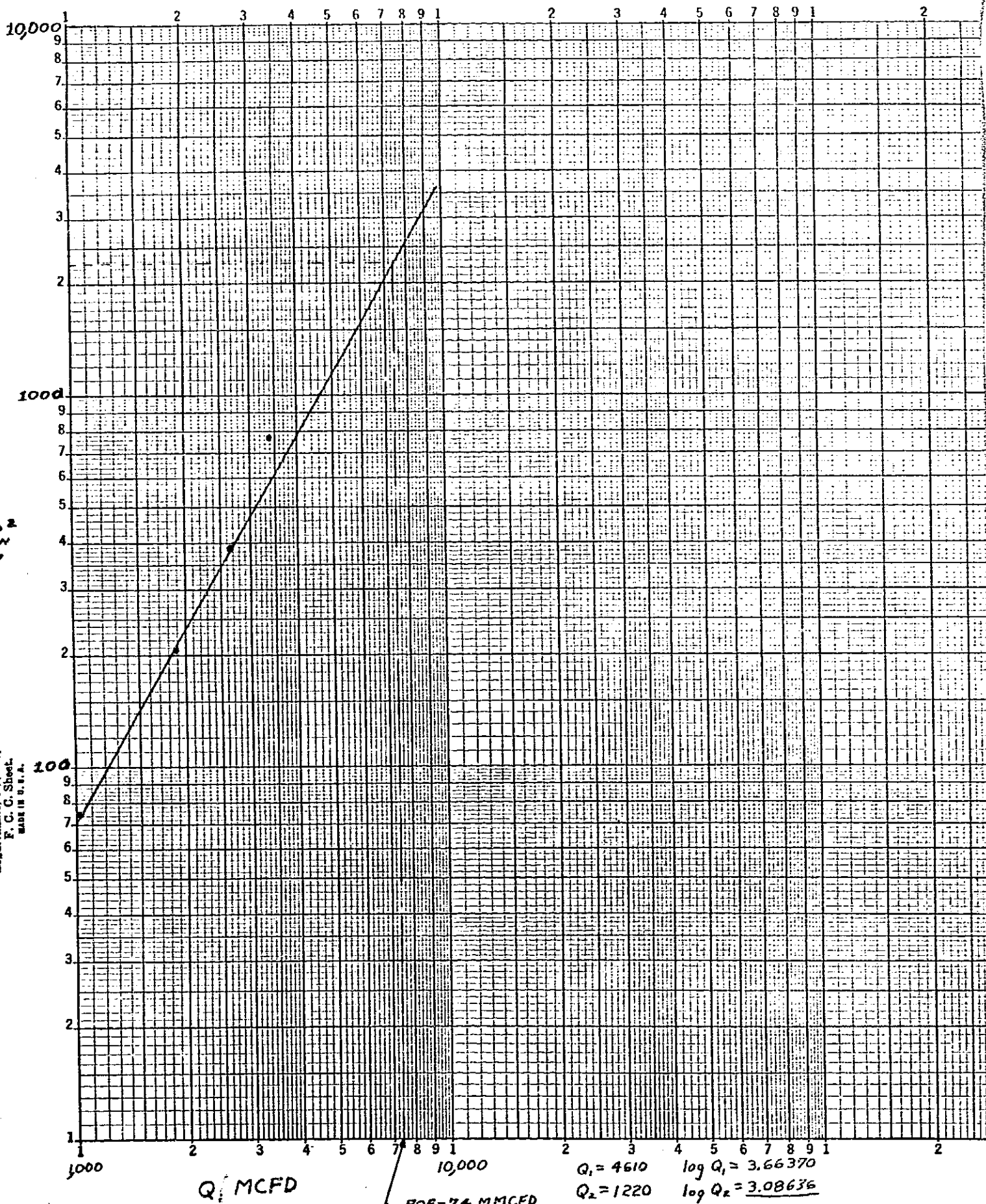
Electric log tops: Permian DeChelly 2738 (+3658), Organ Rock 3102 (+3294), Cutler 3691 (+2705), Penn Harrosa 4442 (+1954), Ismay 5036 (+1360), Desert Creek 5178 (+1218), Akah 5322 (+1074), Barker Creek 5478 (+918), Nolas 5779 (+597), Miss. Lime 5870 (+526), Miss. Dolomite 5940 (+554), T.D. 6111.

Ran 144 jts. (5570' 23# K-55 & 550' 26# K-55) 7" OD casing set and cemented @ 6111' W/165 sacks Halliburton Lite W/6% salt + 210 sacks Class C W/6% salt + 1/2% CFR-2 cement. Plug down @ 12:50 P.M. on 7-31-71. WOC 8 hrs. Ran temperature survey. Top of cement @ 4280'. WOC on 7" casing for a total of 48 hrs. Tested 7" casing with 1500 psi for 30 minutes with no drop in pressure. DD 6083. Perforate Miss. Dolo. W/1-0.49' hole each @ 6014, 6016, 6018, & 6020. Swabbed dry.



$P_e^2 - P_w^2$   
psia

see-12810 KUMMEL & ESSER CO.  
Logarithmic 3 X 5 Cycles  
F. C. C. Sheet  
made in U.S.A.



July 26, 1971

Memo from W. E. Allen, Director  
Enforcement Section

Memo to: Cities Service Oil Company Monsanto #1-A Navajo  
SE/4 NE/4 Sec. 21-T40N-R29E  
Apache County  
Our File #559

Phone call from Cliff Robertson to report results of  
DST #? from 5250-5375' in the Akah. Recovered 300' of 40 gravity  
oil, 300' of heavy gas cut oil. Flowing pressure 214 pounds.  
Final shut in pressure 1086 pounds. DST #? from 5545-5670' in  
the Pinkerton Trail. Gas to surface in four minutes. Flowed  
at a rate of 5.9 MCF through 3/4" choke. Final flowing pressure  
410 PSI.

Revised estimated total depth 6200'. Original pro-  
jected total depth was 5700'.

Form 9-131  
(May 1 63)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE\*  
(Other instructions on re-  
verse side)

Form approved.  
Budget Bureau No. 42-R1424.

SUNDY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT" for such proposals.

1. OIL ☒ GAS ☐ OTHER ☐  
WELL ☒ WELL ☐

2. NAME OF OPERATOR

American Fuels Corporation

3. ADDRESS OF OPERATOR

2921 Carlisle Blvd. N.E. Suite 200 Albuquerque, N.M.

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*  
See also space 17 below.)  
At surface

1980 FNL & 1050 FEL of Section 21, T40N, R29E,  
Apache County, Arizona.

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, ST, GR, etc.)

6383 Gp

6. LEASE DESIGNATION AND SERIAL NO.

14-20-0603-1522

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

Navajo (LSE#03-2399-01)

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

Monsanto-Navajo "A"

9. WELL NO.

1

10. FIELD AND POOL, OR WILDCAT

Wildcat

11. SEC., T., R., M., OR BLK. AND  
SURVEY OR AREA

Sec. 21 T40N, R29E

12. COUNTY OR PARISH 13. STATE

Apache

Arizona

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

(Other)

FULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON\*

CHANGE PLANS

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other) Change of Operator

REPAIRING WELL

ALTERING CASING

ABANDONMENT\*

(Note: Report results of multiple completion on Well  
Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any  
proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones perti-  
nent to this work.)\*

Change of Operator:

From: Cities Service Oil Company  
P.O. Box 69  
Hobbs, New Mexico 88240

To: American Fuels Corporation  
2921 Carlisle, N.E. Suite 200  
Albuquerque, NM 87110

RECEIVED

JUL 16 1973

O & G CONS. COMM.

18. I hereby certify that the foregoing is true and correct

SIGNED

*Harold M. Morgan* TITLE Agent

DATE 7/11/73

(This space for Federal or State office use)

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions on Reverse Side

1559

## WELL SITE CHECK

Contractor Loftland Bros. Person(s) Contacted WECO  
 Spud date 6-30-71 Date 7-7-71  
 Type Rig U-15 Rotary ☒ Cable ☐ Present Operations Drilling @ 2535  
 Samples \_\_\_\_\_ Air \_\_\_\_\_  
 Pipe 7 5/8" @ 859 Cement Circ Drilling with Mud ☒  
 Water Zones \_\_\_\_\_ Size Hole 8 1/4"  
 Lost Circ. Zones None so far Size Drill Pipe 3 1/2  
 Formation Tops \_\_\_\_\_ Type Bit Security  
 Cores, Logs, DST \_\_\_\_\_ No. Bit \_\_\_\_\_ Drilling Rate 1 min. per ft  
 \_\_\_\_\_ Formation \_\_\_\_\_  
 Crews 3 - 4 man Lithology \_\_\_\_\_

## REMARKS, PHOTO, MAP

The original plan was to set 7 5/8" surface at 1100 ±. In running pipe it became stuck at 859 and efforts to free the pipe were unsuccessful. The operators couldn't contact this office - Phil McGrath gave consent to set pipe at 859.

WELL NAME

559

Permit No.

Confidential: Yes No



22

#559

7-7-71

Form 9-331  
(May 1963)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPlicate  
(Other instructions  
verse side)

NAVAJO TRIBAL CONTRACT

Form approved  
Budget Bureau No. 42-R1424

5. LEASE DESIGNATION AND SERIAL NO.  
14-20-0603-1522

6. IF INDIAN, ALLOTTEE OR TRIBE NAME  
NAVAJO (LSE #03-2399-01)

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME  
MONSANTO-NAVAJO #1

9. WELL NO.

10. FIELD AND POOL, OR WILDCAT  
WILDCAT

11. SEC. T. R. N. OF BLK. AND  
SURVEY OR AREA  
SEC 21-T40N-R29E

12. COUNTY OR PARISH  
APACHE

13. STATE  
ARIZONA

SUNDRY NOTICES AND REPORTS ON WELLS  
(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT" for such proposals.)

1. OIL WELL ☒ GAS WELL ☐ OTHER ☐

2. NAME OF OPERATOR  
CITIES SERVICE OIL COMPANY

3. ADDRESS OF OPERATOR  
P.O. BOX 69, HOBBS, NEW MEXICO 88240

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.  
See also space 17 below.)  
At surface

1980 FNL & 1050 FEL, SECTION 21, T40N, R 29E

14. PERMIT NO.

15. ELEVATIONS (Show whether DY, RT, GR, etc.)  
6383 GR.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

(Other)

PULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON\*

CHANGE PLANS

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other)

CEMENT SURFACE CASING

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting and proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

TD 1140 -- Proposed casing & cementing program called for 9 5/8 casing to be set @ 1100 ft. Drilled 12 1/4" hole to a TD of 1140 ft. Ran 9 5/8" OD 32.3# H-40 casing. Casing stuck at 911.81 ft. Oral approval given by Mr. P. T. McGrath, District Engineer, U.S.G.S., to alter casing program 7-5-71. Cemented W/350 sax Halliburton Light W/1/4 lb Flocele, followed by 100 sax Class A W/2% Calcium Chloride. Plug down @ 6:10 P.M. 7/5/71. Cement circulated 125 sax to pit. WOC 24 hrs. Tested to 1000 psi for 30 minutes. Held O.K. Drilled plug @ 6:15 P.M. 7/6/71. Drilling ahead.

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE District Manager

DATE July 7, 1971

(This space for Federal or State office use)

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

RECEIVED

\*See Instructions on Reverse Side

JUL 12 1971

O & G CONS. COMM.

Form 9-331  
(May 1963)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPLE COPY\*  
(Other instructions on re-  
verse side)

NAVAJO TRIBAL CONTRACT

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.  
**14-20-0493-1922**

6. IF INDIAN, ALLOTTEE OR TRIBE NAME  
**NAVAJO (LSE #03-2399-01)**

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME  
**HONJANTO NAVAJO**

9. WELL NO.

10. FIELD AND POOL, OR WILDCAT  
**WILDCAT**

11. SEC. T. R. M. OR BLM. AND  
SURVEY OR AREA  
**Sec 21, T40N, R29E**

12. COUNTY OR PARISH  
**Apache**

13. STATE  
**Arizona**

SUNDRY NOTICES AND REPORTS ON WELLS  
(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☒ GAS WELL ☐ OTHER ☐

2. NAME OF OPERATOR  
**CITIES SERVICE OIL COMPANY**

3. ADDRESS OF OPERATOR  
**P.O. BOX 69, HOBBS, NEW MEXICO 88240**

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*  
See also space 17 below.)  
At surface  
**1930 FNL & 1050 FEL of Section 21-T40N-R29E, Apache County,  
Arizona.**

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)  
**6383 Gr**

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

(Other)

PULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON\*

CHANGE PLANS

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other)

SUBSEQUENT REPORT

REPAIRING WELL

ALTERING CASING

ABANDONMENT

(Note: Report results of multiple completion on Well  
Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting and proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

**TD 53' Rigged up. Spudded 12 1/4" hole June 30, 1971. Drilling ahead.  
Proposed to drill to a T.D. of 5700' and test the Mississippi Formation.**

18. I hereby certify that the foregoing is true and correct

ORIGINAL SIGNATURE

SIGNED **G. D. ROBERTSON**

TITLE **District Admin. Supervisor**

DATE **7-2-71**

(This space for Federal or State office use)

APPROVED BY **WBA**  
CONDITIONS OF APPROVAL, IF ANY:

TITLE

DATE

\*See Instructions on Reverse Side

24

5591

July 1, 1971

Memo from W. E. Allen, Director  
Enforcement Section

Memo to: Cities Service Oil Company Monsanto #1-A Navajo  
SE/4 NE/4 Sec. 21-T40N-R29E  
Apache County  
Our File #559

Well spudded at 11 p.m. 6-30-71. Drilled 12½" hole to 5'.  
Shut down due to mechanical difficulties.

Loffland Brothers is contractor on this well.



## DESIGNATION OF OPERATOR

The undersigned is, on the records of the Bureau of ~~Land Management, Indian Affairs~~ Indian Affairs,  
holder of Navajo Tribal lease  
DISTRICT LAND OFFICE: Window Rock, Arizona  
SERIAL NO.: 14-20-0603-1522

and hereby designates

NAME: Cities Service Oil Company  
ADDRESS: Cities Service Building, Bartlesville, Oklahoma 74003

as his operator and local agent, with full authority to act in his behalf in complying with the terms of the lease and regulations applicable thereto and on whom the supervisor or his representative may serve written or oral instructions in securing compliance with the Operating Regulations with respect to (describe acreage to which this designation is applicable):

Township 40 North, Range 29 East, G.S.R.M.  
Section 21: All  
Section 22: All  
Section 27: All

It is understood that this designation of operator does not relieve the lessee of responsibility for compliance with the terms of the lease and the Operating Regulations. It is also understood that this designation of operator does not constitute an assignment of any interest in the lease.

In case of default on the part of the designated operator, the lessee will make full and prompt compliance with all regulations, lease terms, or orders of the Secretary of the Interior or his representative.

The lessee agrees promptly to notify the supervisor of any change in the designated operator.

MONSANTO COMPANY

By Frank Richardson

(Signature of lessee)

Attorney-in-Fact

1300 Post Oak Tower, 5051 Westheimer,  
Houston, Texas 77027

(Address)

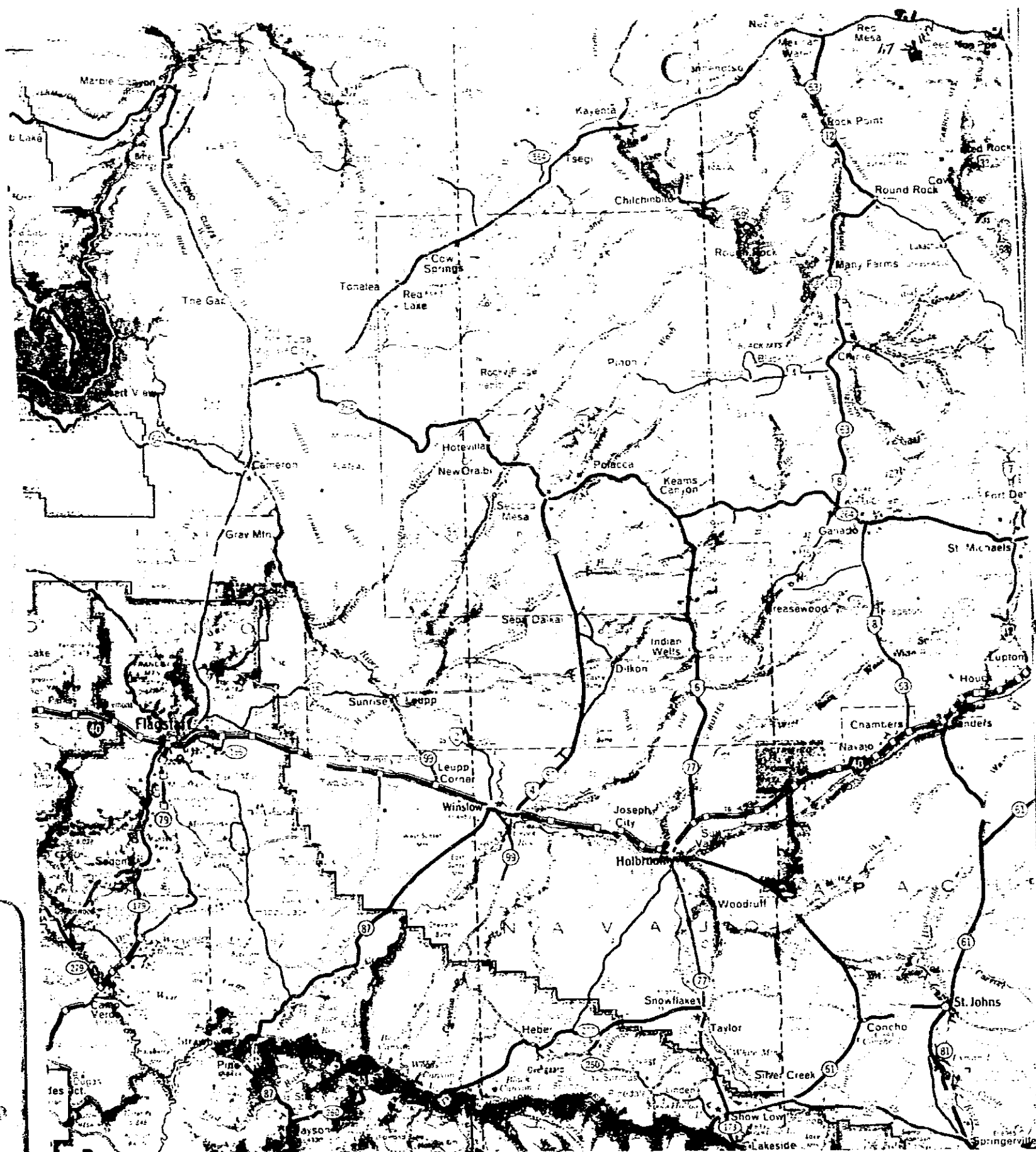
June 8, 1971  
(Date)

RECEIVED

JUN 17 1971

559

O & G CONS. COMM.



Cities service Monsanto 1-A Navajo.  
 Turn south off Highway 160 (Navajo Rt. 1) 9.1 miles East of  
 Red Mesa Trading post. Follow main road 4.2 miles Take  
 Left hand fork for 1.7 miles to location

<b>APPLICATION FOR PERMIT TO DRILL OR RE-ENTER</b> <small>APPLICATION TO DRILL <input checked="" type="checkbox"/> RE-ENTER OLD WELL <input type="checkbox"/></small>			
<b>CITIES SERVICE OIL COMPANY</b> <small>NAME OF COMPANY OR OPERATOR</small>			
BOX 69 <small>Address</small>	HOBBS <small>City</small>	NEW MEXICO 88240 <small>State</small>	
Unknown at this filing <small>Drilling Contractor</small>			
Address Navajo Tribal Cont. #14-20-0603-1522 <small>DESCRIPTION OF WELL AND LEASE</small>			
Federal, State or Indian Lease Number, or if fee lease, name of lessor Monsanto-Navajo "A" (Lse # 03-2399-01)	Well number 1	Elevation (ground) 6383	
Nearest distance from proposed location to property or lease line: 1980 feet N	Distance from proposed location to nearest drilling, completed or applied—for well on the same lease: --- feet		
Number of acres in lease: 1920 Acres	Number of wells on lease, including this well, completed in or drilling to this reservoir: ---		
If lease, purchased with one or more wells drilled, from whom purchased: Name --- Address ---			
Well location (give footage from section lines) 1980' FNL & 1050' FEL	Section—township—range or block and survey SEC. 21-T40N-R29E	Dedication (Comply with Rule 155) 80 Acres	
Field and reservoir (if wildcat, so state) WILDCAT	County APACHE		
Distance, in miles, and direction from nearest town or post office 50 miles west of Shiprock, New Mexico			
Proposed depth: 5700	Rotary or cable tools Rotary	Approx. date work will start June 28, 1971	
Bond Status Required-Approved Amount	Organization Report On file <input checked="" type="checkbox"/> Or attached	Filing Fee of \$25.00 Attached <input checked="" type="checkbox"/>	
Remarks:			
CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the <b>District Manager</b> of the <b>CITIES SERVICE OIL COMPANY</b> (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.			
RECEIVED JUN 17 1971 O & G CONS. COMM.		Signature <i>E. P. Miller</i> Date June 11, 1971	
Permit Number: 559 Approval Date: 6-21-71 Approved By: <i>W. B. Miller</i>	STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION Application to Drill or Re-enter File Two Copies Form No. 3		
Notice: Before sending in this form be sure that you have given all information requested. Much unnecessary correspondence will thus be avoided.			

(Complete Reverse Side)

- Operator shall outline the dedicated acreage for both oil and gas wells on the plat.
- A registered professional engineer or land surveyor registered in the State of Arizona or approved by the Commission shall show on the plat the location of the well and certify this information in the space provided.
- All distances shown on the plat must be from the outer boundaries of the Section.
- Is the Operator the only owner in the dedicated acreage outlined on the plat below? YES \_\_\_\_\_ NO X
- If the answer to question four is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? YES X NO \_\_\_\_\_. If answer is "yes," Type of Consolidation Operating Agreement  
(Designation of Operator Attached)
- If the answer to question four is "no," list all the owners and their respective interests below:

Owner	Land Description

**CERTIFICATION**

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Name E. J. Pindler

Position District Manager

Company CITIES SERVICE OIL

Date June 11, 1971

I hereby certify that the well location shown on the plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed \_\_\_\_\_

Registered Professional Engineer and/or Land Surveyor \_\_\_\_\_

Certificate No. \_\_\_\_\_

**PROPOSED CASING PROGRAM**

Size of Casing	Weight	Grade & Type	Top	Bottom	Cementing Depths	Sacks Cement
9 5/8"	32.3#	H-40 ST&C	-0-	1100	1100-0	Circulate
5 1/2"	14#	J-55 ST&C	-0-	5700	5700-4300	350 sacks

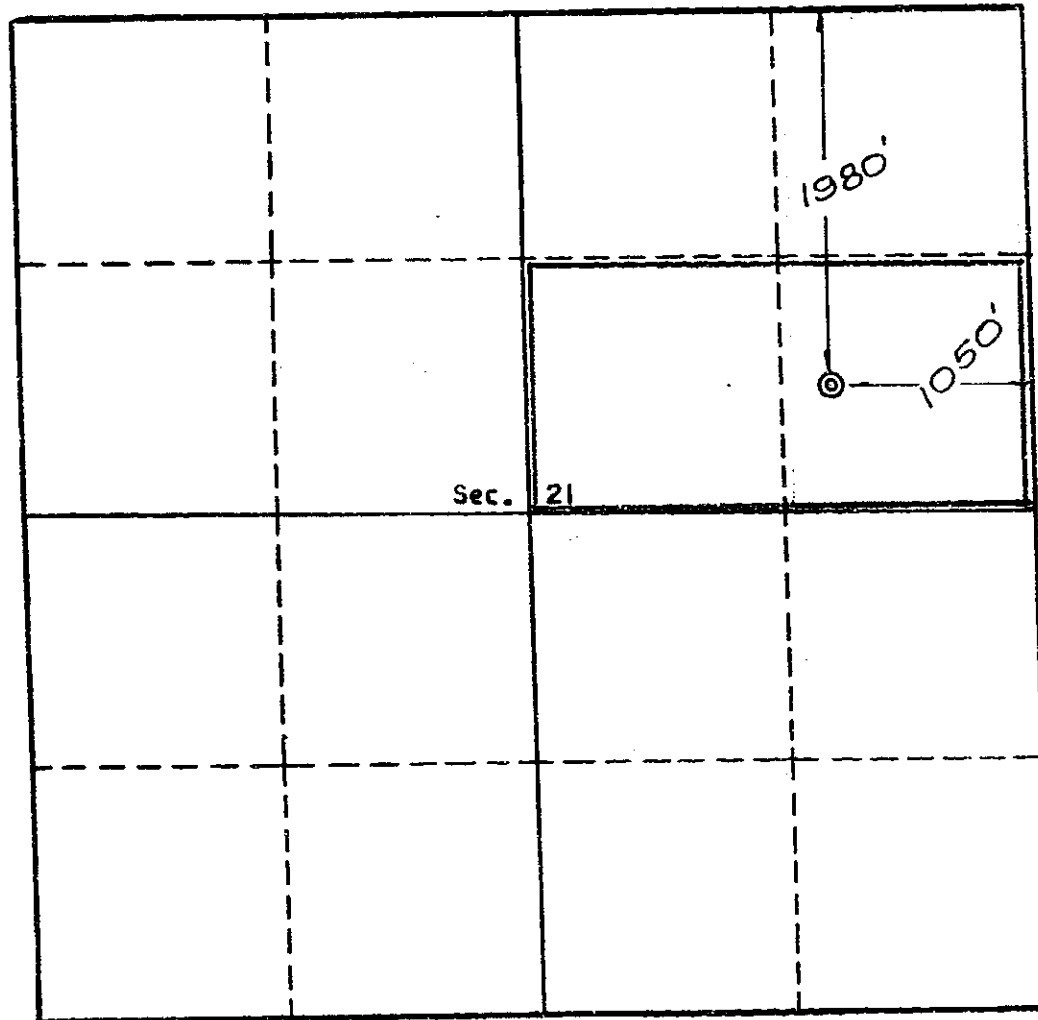
Company Cities Service Oil Co.

Well Name & No. \_\_\_\_\_

Location 1980 feet from the North line and 1050 feet from the East line.

Sec. 21, T. 40 N., R. 29 E., G. & S. R. M., County Apache, Arizona

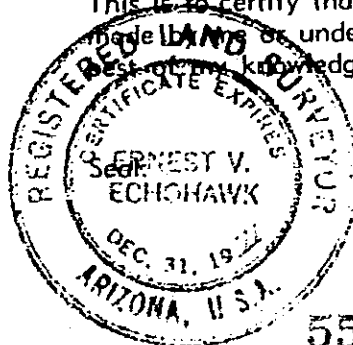
Ground Elevation 6383



Scale, 1 inch = 1,000 feet

Surveyed June 5, 1971

This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.



*Ernest V. Echohawk*  
Ernest V. Echohawk

RECEIVED Registered Land Surveyor  
Arizona Registration No. 2311

JUN 17 1971

559 O & G CONS. COMM.



## PERMIT TO DRILL

This constitutes the permission and authority from the  
OIL AND GAS CONSERVATION COMMISSION,  
STATE OF ARIZONA,

To: CITIES SERVICE OIL COMPANY  
(OPERATOR)

to drill a well to be known as

CITIES SERVICE OIL COMPANY MONSANTO #1-A NAVAJO  
(WELL NAME)

located 1980' FNL - 1050' FEL

Section 21 Township 40N Range 29E, APACHE County, Arizona.

The S/2 NE/4 of said  
Section, Township and Range is dedicated to this well.

Said well is to be drilled substantially as outlined in the attached Application and must be drilled  
in full compliance with all applicable laws, statutes, rules and regulations of the State of Arizona.

Issued this 21st day of JUNE, 19 71.

OIL AND GAS CONSERVATION COMMISSION

PRIOR TO BEING ALLOWED TO PRODUCE THIS WELL  
YOU MUST BE IN FULL COMPLIANCE WITH RULE  
106, SECTION A TAKING EFFECT WITH RESPECT  
TO THE PRODUCT TO BE PRODUCED.

By WBC for John Bonnet  
EXECUTIVE SECRETARY

PERMIT N<sup>o</sup> 559

RECEIPT NO. 2893  
API NO. 02-001-20145

SAMPLES ARE REQUIRED

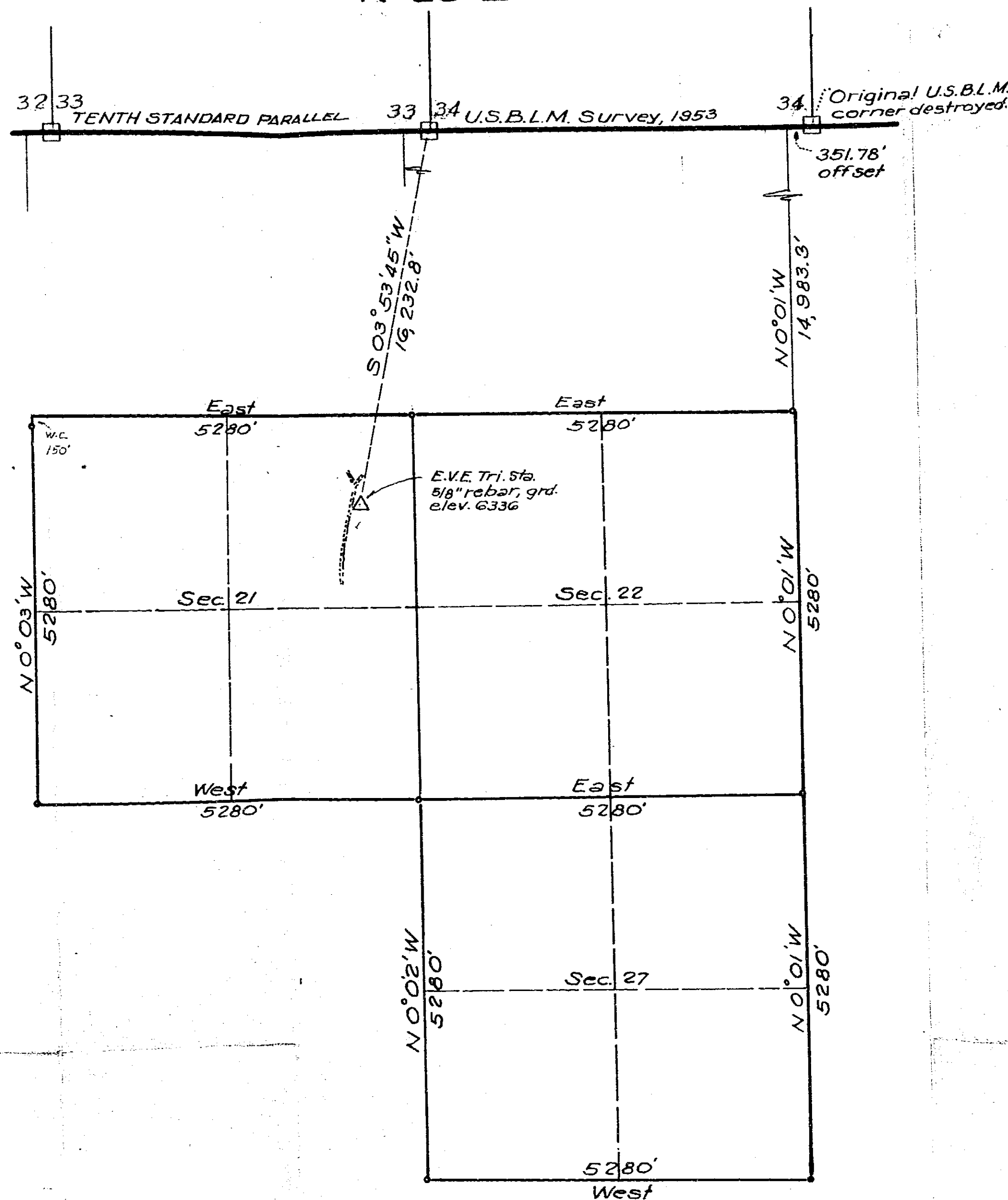
State of Arizona  
Oil & Gas Conservation Commission  
Permit to Drill

FORM NO. 27

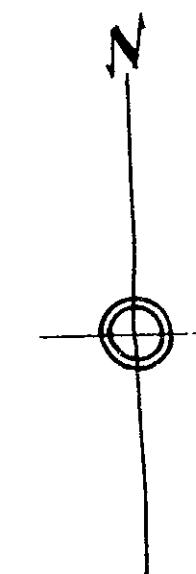
559

T-40-N

R-29-E



U.S.B.L.M.'s Arizona Protraction No. 38 which was approved February 11, 1960 was used as a guide for the survey shown.

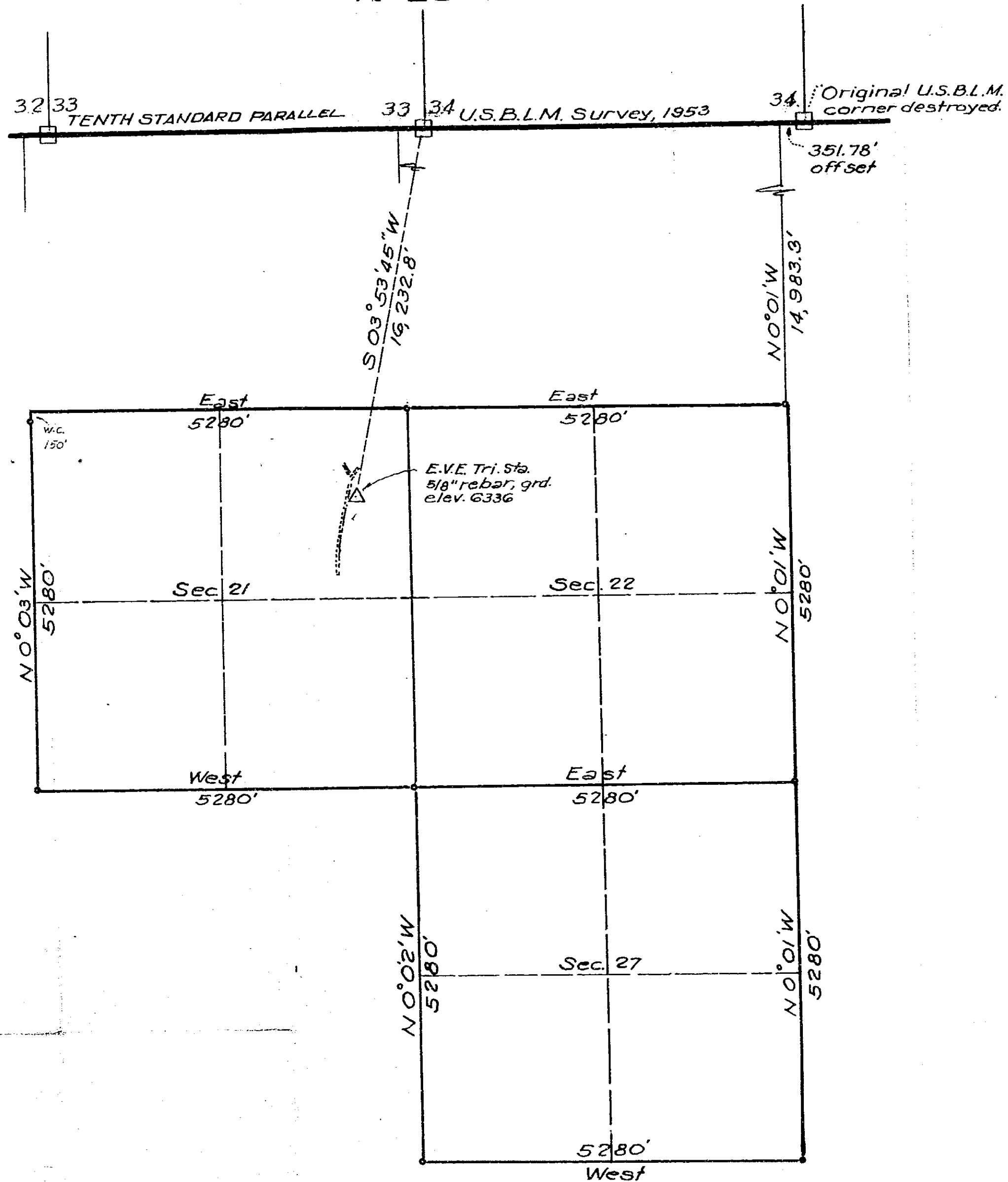


AREA OF THE SHOWN THREE SECTION TRACT IS 1920.0 AC.

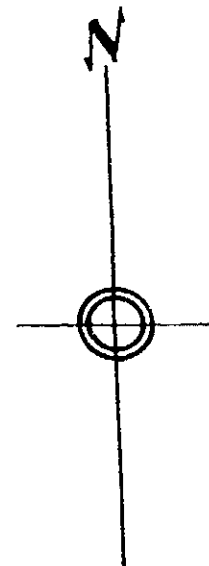
RECEIVED

T-40-N

R-29-E



U.S.B.L.M.'s Arizona Protraction No. 38 which was approved February 11, 1960 was used as a guide for the survey shown.



AREA OF THE SHOWN THREE SECTION TRACT IS 1920.0 AC.

RECEIVED

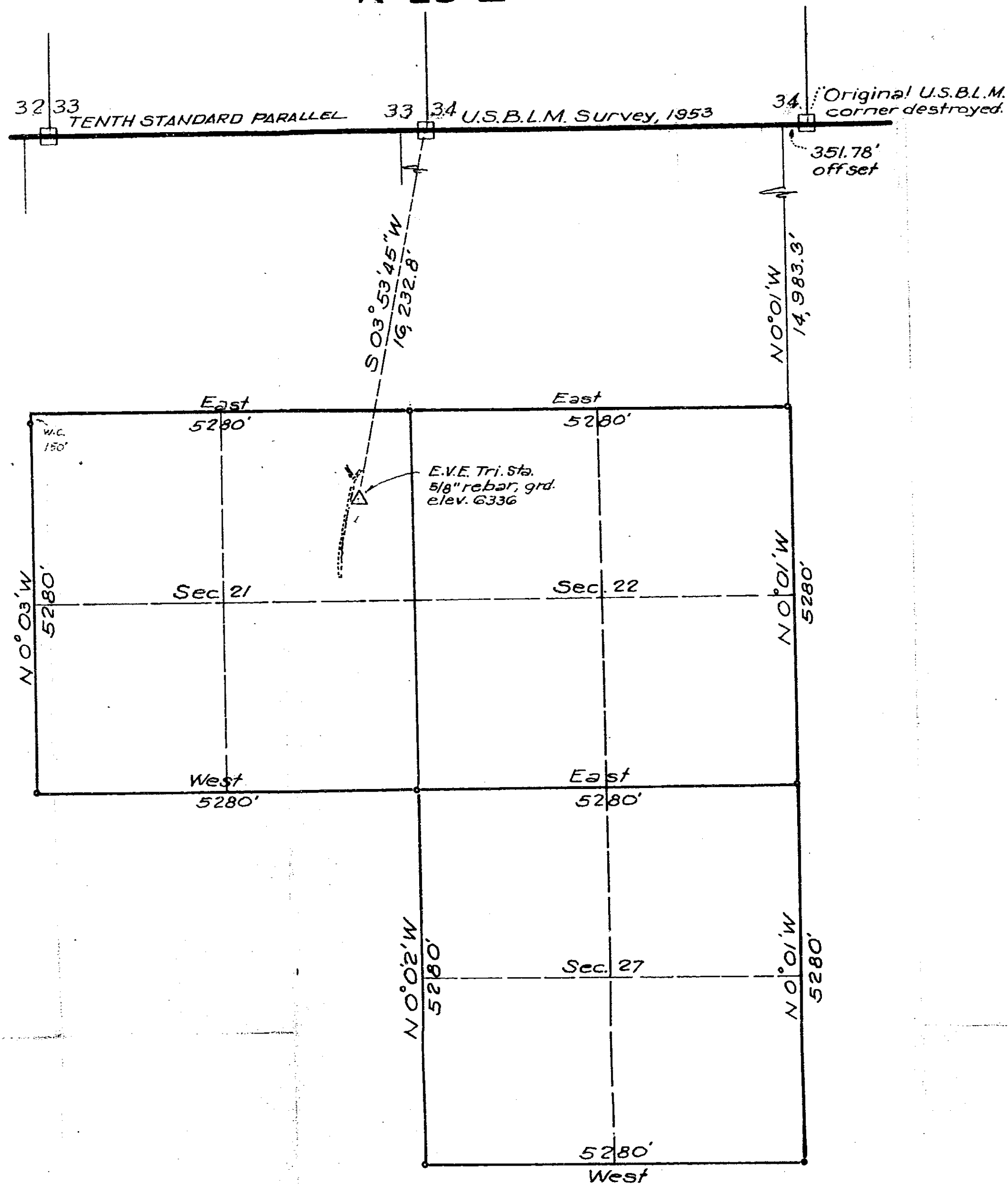
AUG 28 1960



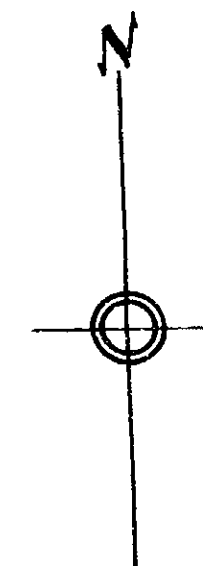
R-29-E

MONSANTO-NAVAJO A #1 Corrected Plat

559



U.S.B.L.M.'s Arizona Protraction No. 38 which was approved February 11, 1960 was used as a guide for the survey shown.

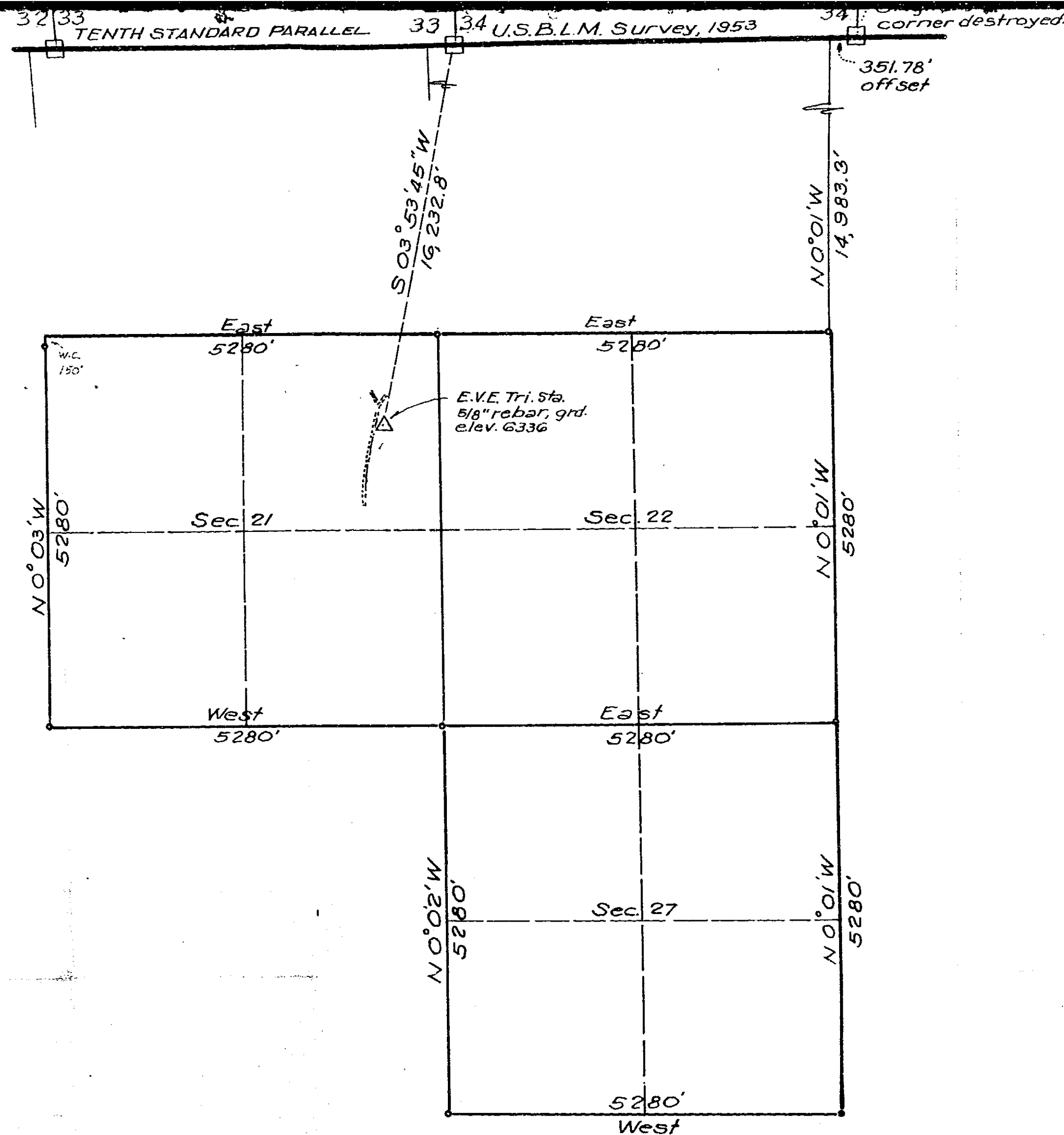


AREA OF THE SHOWN THREE SECTION TRACT IS 1920.0 AC.

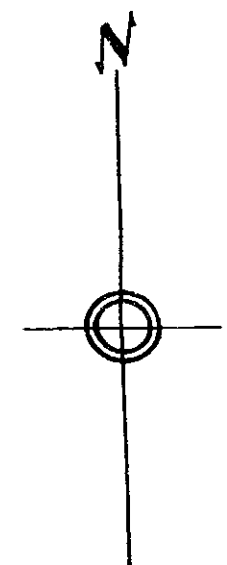
RECEIVED  
AUG 28 1972

CLERK SERVICE 1 MONSANTO  
SE NE Sec. 21-T40N-R29E AR

T-40-N



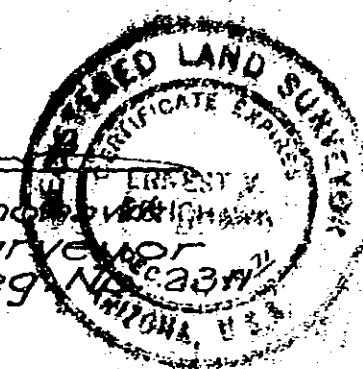
U.S.B.L.M.'s Arizona Protraction No. 38, which was approved February 11, 1960 was used as a guide for the survey shown.



AREA OF THE SHOWN THREE SECTION TRACT IS 1920.0 AC.

Surveyed by:

Ernest V. Echols  
Reg. Land Surveyor  
Arizona Reg. No. 2342



RECEIVED

AUG 28 1972

O & G CONS. COMM.

CITIES SERVICE OIL

SURVEY OF NAVAJO TRIANGLE  
CONTRACT NO. 14-20-0603  
COMPRISED OF SECTIONS  
27, T-40-N, R-29-E, G.8-S  
APACHE COUNTY, ARIZONA

JUNE, 1971 SCALE, 4"

CLERK SERVICE 1 MONSANTO  
SE NE Sec. 21-T40N-R29E A1

**BLACK ROCK FIELD**

**Operator:** RIM Southwest Corporation

**Bond Company\*:** Indian lands, evidence of bond posted with BIA

RLI Insurance Co. \$150,000 BIA Nationwide Bond No. RLB0003993

**Date of Bond:** 11/26/01

**Date approved:** \_\_\_\_\_

**\* Pursuant to Commission motion of October 31, 1997, no bond required with State of Arizona upon evidence of bond posted with the BIA.**

**Permits covered by this bond posted with the BIA:**

Dry Mesa Field	<u>077</u>
	<u>106</u>
	<u>115</u>
	<u>852</u>
	<u>907</u>

Black Rock Field	<u>559</u>
	<u>581</u>
	<u>868</u>
	<u>871</u>
	<u>875</u>
	<u>882</u>



Jane Dee Hull  
Governor

State of Arizona  
**Arizona Geological Survey**  
416 W. Congress, Suite 100  
Tucson, Arizona 85701  
(520) 770-3500



Larry D. Fellows  
Director and State Geologist

February 13, 2001

CERTIFIED MAIL

Mr. Robert L. Vesco  
Vice-President  
RIM Southwest Corporation  
5 Inverness Drive East  
Denver CO 80112

Re: Release of State-wide Performance Bond CD #2578904

Dear Mr. Vesco:

This will acknowledge evidence of RIM Southwest Corporation's bonding with the U.S. Department of the Interior, Bureau of Indian Affairs. As a result, the referenced certificate of deposit and executed release form are enclosed.

Sincerely,

A handwritten signature in cursive script, reading "Steven L. Rauzi".

Steven L. Rauzi  
Oil & Gas Administrator

Enclosures

**SECURITIES SAFEKEEPING**  
1700 WEST WASHINGTON ST. - PHOENIX, ARIZONA 85007

DATE: 02/05/01

STATE AGENCY NO. \_\_\_\_\_

STATE AGENCY ARIZONA GEOLOGICAL SURVEY/OIL&GAS COMM.

State Treasurer's Use Only

COMPANY CHUSKA ENERGY CO. / Harken Southwest Corp.  
1850 MT DIABLO BLVD STE 640  
WALNUT CA 94500

DOMESTIC FOREIGN

**DEPOSIT**

C.D. NO.:

BANK:

MATURITY DATE:

INTEREST RATE:

%

AMOUNT \$

C.D. ASSIGNMENT MUST BE ATTACHED UNLESS C.D. IS PAYABLE TO STATE TREASURER

**RELEASE**

C.D. NO.: 2578904 ✓  
ACCT NO.: 8272-4968 ✓  
BANK: VALLEY NATIONAL BANK OF ARIZONA ✓

MATURITY DATE: 05/30/90 ✓

INTEREST RATE: 7.30 %

AMOUNT \$ 25,000.00 ✓

STATE TREASURER VALIDATION NO. \_\_\_\_\_

RECEIVED THE ABOVE RELEASE

STATE AGENCY AUTHORIZATION

BY Jerry D. Miller 05 Feb 01  
Authorized Signature Date

BY Jerry D. Miller 05 Feb 01  
Authorized Signature

ARIZONA GEOLOGICAL SURVEY  
Bank or Firm

BY Katherine Liberton  
Authorized Signature

FOR BANK USE ONLY

BANK AUTHORIZATION

Checked by

Verified by

BY \_\_\_\_\_  
Authorized Signature

STATE'S DEPOSITORY BANK



Jane Dee Hull  
Governor

State of Arizona  
**Arizona Geological Survey**

416 W. Congress, Suite 100  
Tucson, Arizona 85701  
(520) 770-3500



Larry D. Fellows  
Director and State Geologist

February 5, 2001

Ms. Debby Harrington  
RIM Southwest Corporation  
5 Inverness Drive East  
Denver CO 80112

Dear Ms. Harrington:

This will acknowledge receipt of documentation of name change,  
Organization Report (Form 1) and updated Operator's Certificate of Compliance and  
Authorization to Transport Oil or Gas from Lease (Form 8).

I have enclosed approved duplicate originals of Form 8 for your files.

Sincerely,

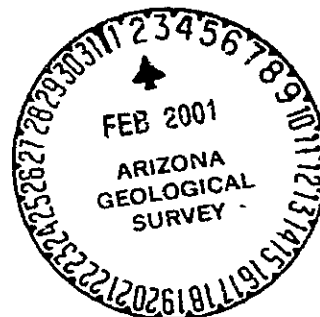
Steven L. Rauzi  
Oil & Gas Administrator

Enclosures

**RIM SOUTHWEST CORPORATION**  
5 INVERNESS DRIVE EAST  
ENGLEWOOD, COLORADO 80112  
303-799-9828

January 30, 2001

Mr. Steven Rauzi  
Oil & Gas Program Administrator  
Arizona Geological Survey  
416 W. Congress, #100  
Tucson, AZ. 85701



Re: RIM Southwest Corporation


Dear Mr. Rauzi,

As you requested, please find an Organization Report and documentation evidencing the name change from Harken Southwest Corporation for RIM Southwest Corporation.

Also enclosed is Form 8, in duplicate, for NOG 8707-1139, NOG 8707-1140 and NOG 8707-1142.

Please call me at (303) 799-9828, extension 305, if you have any questions or need anything further. Thank you for your assistance.

Very truly yours,

  
Debby Harrington  
Senior Landman



**The RIM Companies**  
5 Inverness Drive East  
Englewood, Colorado 80112  
303-799-9828  
Fax 303-799-4259  
E-Mail: rvesco@rimop.com



January 25, 2001

Mr. Steven Rauzi (520) 770-3500  
Oil & Gas Program Administrator Fax (520) 770-3505  
Arizona Geological Survey  
416 W. Congress, #100  
Tucson, AZ. 85701

RE: Bonding for RIM Southwest Corporation

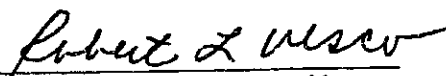
Dear Mr. Rauzi:

Enclosed please a copy of the approval letter dated May 18, 2000, from the United States Department of the Interior, Bureau of Indian Affairs for RIM's \$150,000 nationwide bond.

Additionally, RIM Southwest Corporation, (formerly known as Harken Southwest Corporation) has a \$25,000 certificate of deposit, certificate # 2578904, with the State of Arizona, maturing April 2, 2001. Please take the necessary action to release this certificate of deposit.

If you need any further information regarding the above referenced information, please contact me at extension 206. Thank you for your help.

Sincerely yours,

  
Robert L. Vesco, Vice-President  
Secretary/Treasurer

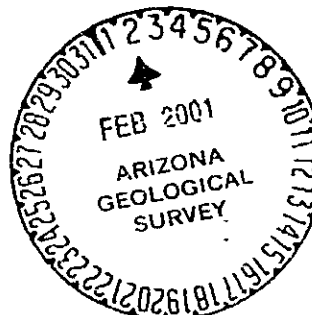
**The RIM Companies**  
5 Inverness Drive East  
Englewood, Colorado 80112  
303-799-9828  
Fax 303-799-4259  
E-Mail: rvesco@rimop.com



Oil & Gas  
Acquisitions & Management  
Rocky Mountains / Texas

January 25, 2001

Mr. Steven Rauzi  
Oil & Gas Program Administrator  
Arizona Geological Survey  
416 W. Congress, #100  
Tucson, AZ. 85701



RE: Name Change of Harken Southwest Corporation

Dear Mr. Rauzi:

Enclosed please find the State of New Mexico filed copy of "Articles of Amendment to the Articles of Incorporation" changing "Harken Southwest Corporation's" name to "RIM Southwest Corporation" ("RIM"). The corporation's federal tax identification number has not changed (85-0284260). RIM's address is 5 Inverness Drive East, Englewood, Colorado 80112.


Additionally, the officers of RIM Southwest Corporation are as follows:

President	Stephen W. Rector
Vice President	Rene' Morin
Vice President	William J. Holcomb
VP, Secretary/Treasurer	Robert L. Vesco

Additionally, enclosed is a copy of RIM Operating, Inc. and RIM Offshore, Inc.'s "United States Department of the Interior, Bureau of Indian Affairs, Nationwide Oil and Gas Bond Number RLB0001937" in the amount of \$150,000, along with Bond Rider to Assume Liability Number 1 and RLI Insurance Company's Power of Attorney. With your concurrence, RIM would like to add RIM Southwest Corporation as an additional principal to this bond. Please coordinate with us regarding this matter.

If you need any further information regarding the above referenced information, please contact me at extension 206.

Sincerely yours,

  
Robert L. Vesco, Vice-President  
Secretary/Treasurer

Operator CHUSKA ENERGY COMPANY (Harker Southwest Corp.)

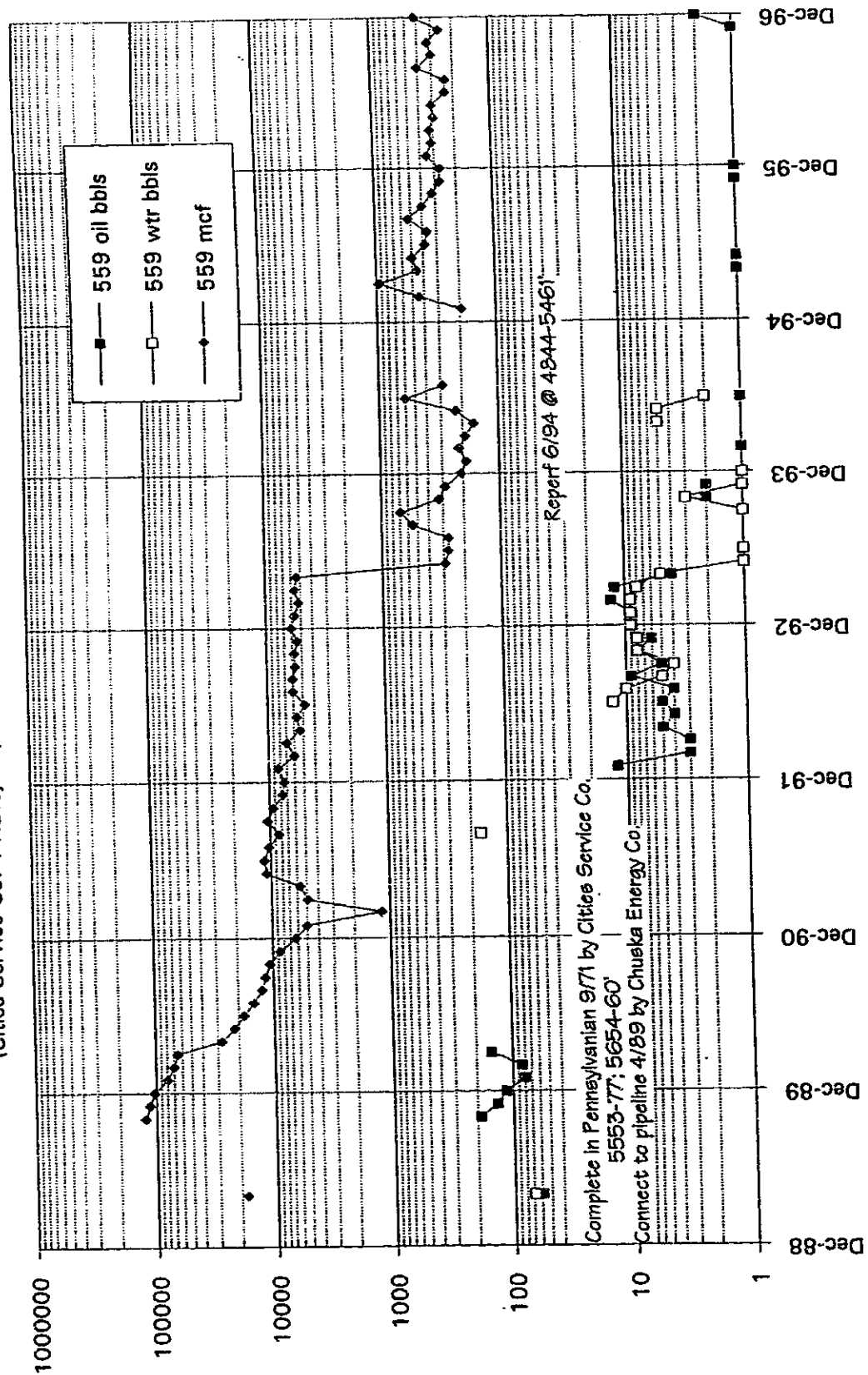
Bond Company VALLEY NATIONAL BANK - ARIZONA Amount \$25,000.00

Bond No. CD #2578904 Date Approved 12/01/89

DATE Permits covered by this bond:

559  
581  
610 (P & A 11-21-95)  
615 (P & A 5/10/91)  
868  
869 EXPIRED  
870 (Junked & Abandoned 05/90)  
871  
872 Extension to 8-1-91  
873 P & A 8/9/93  
874 Extension to 8-1-91  
875  
881

**MONTHLY PRODUCTION AT 1 BLACK ROCK (559), ARIZONA: APR 1989 - DEC 1996**  
 (Cities Service Co. 1 Navajo-A, se ne 21-40n-29e, Black Rock Field, Apache County)



**HARKEN**  
ENERGY  
CORPORATION



March 11, 1994

State of Arizona  
Oil & Gas Conservation Commission  
845 N. Park Avenue, Suite 100  
Tucson, AZ 85719

559

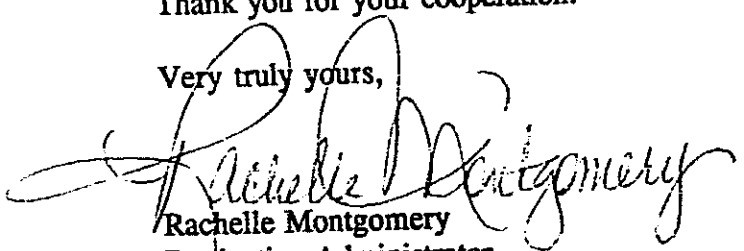
Re: NOG 8702-1139  
NOG 8702-1140  
NOG 8702-1142  
Black Rock Well No.'s 1, 3, 5, 8 and 12

Gentlemen:

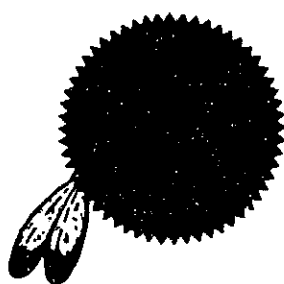
Please be advised that Harken Southwest Corporation no longer has a Farmington, New Mexico office. Therefore, please direct all future correspondence, regarding regulatory issues, to the undersigned at the letterhead address.

Thank you for your cooperation.

Very truly yours,

  
Rachelle Montgomery  
Production Administrator

RM/jkw



## HARKEN SOUTHWEST CORPORATION

(formerly Chuska Energy Company)

March 2, 1994



Mr. Steven Rauzi  
Oil & Gas Program Administrator  
Arizona Geological Survey  
845 Northpark Ave., Suite 100  
Tucson, Arizona 85719

Re: Chuska Energy Company-Arizona Statewide Bond for Drilling of Wells

Dear Mr. Rauzi:

Please be advised that with regard to the above referenced bond we are herewith enclosing documentation relating to a name change. Chuska Energy Company has now changed its name to Harken Southwest Corporation. Copies of the official documentation relating to this change of name are enclosed. We would appreciate the Arizona Geological Survey changing their records to style the above referenced bond as follows:

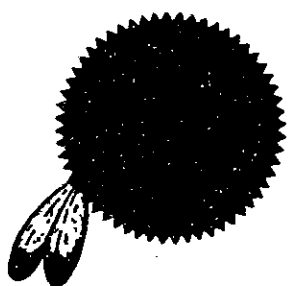
**Harken Southwest Corporation, formerly Chuska Energy Company**

Sincerely

HARKEN SOUTHWEST CORPORATION

Dale Brooks  
Treasurer

DB:le  
Enclosures  
cc: Bruce N. Huff



## HARKEN SOUTHWEST CORPORATION

(formerly Chuska Energy Company)

January 28, 1994

We are pleased to announce that Chuska Energy Company has changed its name to Harken Southwest Corporation. This is in line with the February, 1993 merger with Harken Exploration Company.

Harken Southwest Corporation will continue to be located at 3315 Bloomfield Highway, Farmington, New Mexico 87401. Our telephone number will remain (505) 326-5525.

Please reflect this name change on all future correspondence.

Thank you for your assistance in this matter. We look forward to working with you as Harken Southwest Corporation.

Sincerely,

BARRY A. WIELAND  
Operations Manager





## CHUSKA ENERGY COMPANY

315 N. BEHREND • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 326-5525

P.O. BOX 780 • FARMINGTON, NEW MEXICO 87499

It. #559

April 26, 1990

Mr. Daniel J. Brennan  
Oil and Gas Conservation Commission  
5150 N. 16th Street, Suite B-141  
Phoenix, Arizona 85016

Dear Dan:

Chuska has received and reviewed your letter dated April 17, 1990. Our comments pertaining to that letter are discussed below.

Chuska did not file completion reports for the Black Rock No. 1 and No. 3, and does not intend to. In the case of the Black Rock No. 1, the well was tested for five days and later production into a pipeline was initiated. These activities are reported by Sundry Notice. Since Chuska did not work over the well, a completion report is not appropriate.

The Black Rock No. 3 was simply turned on for gas sales. This activity is reported by Sundry Notice.

As you are aware, Chuska operates a central facility at Black Rock Field where separation of condensate, gas, and water occurs, along with compression. The installation of separation equipment on individual wells is not practical since oil and water trucks cannot negotiate the mountain roads during the winter months. Wet gas is produced from each well into the gathering system, and ultimately to the facility. The measurement of this wet gas at each well is not practical or accurate due to slugs of fluid hitting the orifice plate and "painting" the meter chart.

Chuska addresses this problem by periodically moving a test separator on to each well, which measures gas, condensate, and water rates. These tests are used to allocate monthly production to each well. We believe the resulting production reported for each well is accurate.

Chuska cannot comply with your request for individual meters on each well. The cost involved to facilitate accurate measurement is extreme, and the winter operation of the field would be very difficult.



The Black Rock Field central facility does not include a gas plant. It's major purpose is compression of gas from the Black Rock No. 2. Condensate and water are removed from the wet gas produced to comply with the gas quality provisions of our gas sales contract.

We hope this answers the concerns you raised in your letter of April 17, 1990. Should you wish to discuss these matters further, please contact Tom McCarthy at 505-326-5525.

Sincerely,

*H. Merle Myers*

H. MERLE MYERS  
Vice President of Production

HMM:bnp  
File:TRM\BRPIPELN.1&3



**Oil and Gas Conservation Commission**

STATE OF ARIZONA

5150 N. 16th STREET, SUITE B-141  
PHOENIX, ARIZONA 85016  
PHONE: (602) 255-5161

April 17, 1990

Mr. Don S. Barnes  
Operations Manager  
Chuska Energy Company  
315 N. Behrend  
Farmington, NM 87401

Dear Don:

It has been brought to my attention that we have not received a completion report on the Black Rock No. 1 or on the Black Rock No. 3 well. We are enclosing copies of Commission Form No. 4 Well Completion or Recompletion Report for your convenience.

You may recall our trip to Black Rock last year. At that time we reminded you that each well's production should be metered separately. You told us that you would be having the meters installed in a few weeks. We notice, however, that you are still flowing the wells through a central meter. Please arrange to have this corrected.

We are also enclosing copies of Form 21, Gasoline Plant Report, for your convenience in reporting liquid hydrocarbons separated from the gas stream there at Black Rock. If you have a computerized reporting system which includes the information we require, either for gas production, our Form 16 - Monthly Producers Report, for separated liquid hydrocarbons, Form 21 - The Gasoline Plant Report, we will accept certified copies to save you additional overhead.

Thank you for your cooperation.

Very truly yours,

Daniel J. Brennan  
Executive Director

Encl.



## CHUSKA ENERGY COMPANY

315 N. BEHREND • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 326-5525

559  
515  
581

November 9, 1989

STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION  
5150 N 16th STREET  
SUITE B141  
PHOENIX AZ 85016  
ATTN: DANIEL J BRENNAN

Mr Brennan:

Enclosed is the Monthly Production Report for the month of October for the Black Rock Lease NOG-8702-1116.

As you are aware, we are currently producing into a common production facility and pipeline. Currently, we are in the process of obtaining a portable test unit in which individual well tests can be obtained.

If you have any questions regarding this please do not hesitate to contact me at (505) 326-5525.

Sincerely,

  
DONALD S BARNES  
Operations Manager

DSB/tlb  
Enclosures

File: WP\BRENNAN.TLB



**Oil and Gas Conservation Commission**

STATE OF ARIZONA

5150 N. 16th STREET, SUITE B-141  
PHOENIX, ARIZONA 85016  
PHONE: (602) 255-5161

**BEFORE THE OIL AND GAS CONSERVATION COMMISSION  
OF THE STATE OF ARIZONA**

In the matter of the Hearing called  
by the Oil and Gas Conservation  
Commission of the State of Arizona  
for the purpose of considering:

CASE NO. 62  
ORDER NO. 56

The application of Chuska Energy Company  
to establish a rule for 160-acre spacing  
in the Black Rock Field, Apache County,  
Arizona

**ORDER OF THE COMMISSION**

This cause was considered at 10:05 A.M. on September  
15, 1989 at Phoenix, Arizona by the OIL AND GAS CONSERVATION  
COMMISSION OF THE STATE OF ARIZONA, hereinafter referred to  
as the COMMISSION.

The COMMISSION, a quorum being present, having  
considered the facts presented and being fully advised in  
the premises, finds as follows:

**FINDINGS:**

(1) THAT the COMMISSION has jurisdiction of the  
subject matter thereof, pursuant to ARS 27-504 and 27-516 A.12.

(2) THAT adequate geological and engineering data has  
been presented to the COMMISSION to conclude that the  
Paradox formation in the subject area is a pool and a  
separate common source of supply of gas and associated  
hydrocarbons.

(3) THAT 640-acre spacing will not adequately drain  
the reservoir, resulting in waste of the resource.

(4) THAT spacing of less than 160 acres per well would  
result in drilling of unnecessary wells.

Chuska Energy Company  
Page - 2 -

(5) THAT 160 acres is not less than the maximum area that can be effectively drained in an efficient and economical manner by a single well producing gas and associated hydrocarbon from the Paradox formation in subject area.

(6) THAT it is in the best interest of the people of the STATE OF ARIZONA that the application for 160-acre spacing in Black Rock Field, Apache County, Arizona be approved.

THEREFORE the COMMISSION orders:

(1) THAT there be established 160-acre spacing units for the production of gas and associated hydrocarbons in the following area:

T40N-R29E G&SRB&M

Sec 7, W 1/2 and SE 1/4	Sec 18, N 1/2 and SE 1/4
8, S 1/2	20, NE 1/4
9, S 1/2	21, All
15, W 1/2	22, All
16, All	23, SW 1/4
17, All	26, NW 1/4
	27, N 1/2

T40N-R28E G&SRB&M

Sec 1, All	Sec 11, All
Sec 2, All	Sec 12, All

(2) THAT the 160-acre spacing units shall correspond with governmental quarter sections according to the protracted governmental survey of the area.

(3) THAT except as provided in Section 4 below, no gas well shall be drilled closer than 660 feet from the outer boundary of any quarter section, in the area spaced.

(4) THAT the following existing wells are designated as the unit wells for the spacing unit in which they are located even though they are exceptional locations.

O&G Permit #	Name	Spacing Unit
115	Dry Mesa (Texas Pacific)	SE 1/4 Sec 2 T40N-R28E
	138-3Navajo	
615	Chuska (American Fuels)	NE 1/4 Sec 17 T40N-R29E
	Black Rock 2 (1Navajo AC)	
581	Chuska (Am Fuel, CSO)	NW 1/4 Sec 16 T40-R29E
	Black Rock 3 (1-16 Navajo)	

Chuska Energy Company  
Page - 3 -

(5) THAT the producing interval to which this order applies is the Pennsylvanian Paradox formation correlative with the interval 4567 feet to 5558 feet in the well Chuska Energy (American Fuels) Black Rock #2 (1Navajo AC) located in Section 17, T40N-R29E, Apache County, Arizona.

OIL AND GAS CONSERVATION COMMISSION

By J. Dale Nations  
J. Dale Nations, Chairman

DATE 9/29/89

(SEAL)

ATTEST:

Daniel J. Brennan  
Daniel J. Brennan  
Executive Director

DATE October 2, 1989

Chuska Energy Company  
Page - 3 -

(5) THAT the producing interval to which this order applies is the Pennsylvanian Paradox formation correlative with the interval 4567 feet to 5558 feet in the well Chuska Energy (American Fuels) Black Rock #2 (1Navajo AC) located in Section 17, T40N-R29E, Apache County, Arizona.

OIL AND GAS CONSERVATION COMMISSION

By J. Dale Nations  
J. Dale Nations, Chairman  
DATE 9/29/89

(SEAL)

ATTEST:

Daniel J. Brennan  
Daniel J. Brennan  
Executive Director

DATE October 2, 1989



## CHUSKA ENERGY COMPANY

315 N. BEHREND • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 326-5525

January 26, 1989

State of Arizona  
Oil and Gas Commission  
3110 N. 19<sup>th</sup> Ave., Ste. 190  
Phoenix, Arizona 85015

Attention: Mr. Dan Brennan, Director

Re: Commingling Zones In Black Rock Field, Apache County

Dear Mr. Brennan:

Chuska Energy Company has received permission to re-enter three (3) wells in the Black Rock Field, Apache County Arizona, Township 40N Range 29E. Through conversations with your office, it was discovered that all of the zones we intend to re-enter and test had been commingled. No commingling order had been issued by The Oil and Gas Commission. Chuska is ready to go forward with this project but we need to resolve the commingle problem. Our contention is that since the field is already commingled we should be allowed to administratively receive permission to produce the zones together. We will submit a formal request to this effect, but would like to have permission to proceed with our present plans, which do not call for the zones to be separated. We can not see that any benefit will result from separation of the intervals. Great expense will result from having to change procedures that would require us to set plugs between zones just to separate zones that are already commingled. This expense would come not only from the extra time required to set the plugs, but from the need to then move a rig to location and retrieve the plugs so that the well can be placed on production. We realize and appreciate that this is unorthodox, but the mitigating circumstances lead us to believe that our request is justified in this case. It is critical to all parties concerned, especially Chuska and The Navajo Nation, that this work be allowed to proceed without being hindered by the need to wait on permission to commingle zones.

The attached pages contain a table showing all wells on Chuska's lease, a map showing well locations, structure maps on top of the Pinkerton Trail and Mississippian Formations, and information on each well. The table is arranged so that pressure data on each zone can be easily compared. The well name number and location are listed first. The "Notes" column contains information that is not listed elsewhere in the table. This information contains DST data on zones that are not of primary interest to Chuska. It has any message of interest concerning the well and its productive characteristics and if it is plugged. Following the "Notes" column are separate columns for each of the primary zones of interest. In these columns are listed any pressure information available. Pressure measurements come from two sources; the primary source is DST (Drill Stem Test) data;



the secondary source is production tests. The DST data is best suited to determine formation pressure because the bottom hole pressure (BHP) is measured directly. Production test pressure information requires that the fluid level in the production string be known in order to calculate BHP's (if a bottom hole pressure bomb was not in place during the test). Determination of this fluid level is often only a good guess, making the BHP difficult to determine. Unfortunately not all wells have DST information, but there is enough DST data in different zones to see the small pressure differential between all zones of interest to Chuska. Numerous production tests were run on many of the wells, however not much pressure data was reported. Pressure measurements on production tests are often flowing pressures with little way to convert them to accurate BHP's. For this reason, not all production tests were recorded in the table. Only those tests that had shut-in or bottom hole recorded gauges were reported. The well data sheets show a well bore schematic with casing strings, packers, plugs (both mechanical and cement), and perforations. The perforated intervals are listed along with stimulation treatments. Other data such as logs run, production tests, initial potential, and well status is recorded.

Examination of the pressure data will demonstrate that in most zones the bottom hole pressure ranges from 1200 to 1500 psi across the field. The fluctuation of pressure in different zones of the same well is also in the 1200 to 1500 psi range. For this reason, we do not feel that significant cross flow will occur between any of the intervals if they are produced into a common well bore. Should our production testing reveal substantial pressure differential, we would of course want to separate zones. Our best economic interest is served in this manner.

Water is produced from different formations at Black Rock. We do not have water analyses that enable us to determine compatibility of waters from different formations. There is no data to support any scaling or other damaging tendencies of mixing waters from separate zones.

The structure maps show that the Pennsylvanian and Mississippian formations are closed. Zones commingled in this field will not effect other fields in the area.

Our plans call for commencement of work on February 3, 1989. You have scheduled a hearing for February 10, 1989. In all likelihood, we will begin work prior to the hearing. We have confidence The Commission will see the benefits of allowing this request.

Sincerely,

*John Alexander*

John Alexander  
Production Manager



**Oil and Gas Conservation Commission**  
STATE OF ARIZONA

3110 N. 19th AVENUE, SUITE 190  
PHOENIX, ARIZONA 85015  
PHONE: (602) 255-5161

September 21, 1988

Chuska Energy Company  
P.O. Box 98  
Farmington, New Mexico 87499

Attention: Bill Bunton

Dear Bill:

Enclosed are three approved plans of workover for the following wells.

<u>Permit #</u>	<u>Operator</u>	<u>Lease</u>	<u>Location</u>
581	Chuska	1 Navajo "C"	16,40N-29E.
559	Chuska	1 Monsanto, Navajo "A"	21,40N-29E.
615	Chuska	1 Navajo "AC"	17,40N-29E.

Upon successful completion of any of these wells, please send in a completed copy of Form 4 for our records. (copy enclosed). We are also enclosing copies of other forms you will need when you have a successful gas well completion. (Forms 3, 7, 8, 11, 12, 13, 14, 18, 20).

If you should have to plug any of them, our rules require approval of the plan (copy of application enclosed) and at least 24 hours notice to allow us time to get up there to witness the plugging (Form 9, Form 10 enclosed).

You have our best wishes and hopes for successful completion.

Very truly yours,

*Dan*

Daniel J. Brennan  
Director

DJB:lr  
Encl.

March 5, 1975

Mr. Daymon Gililand  
Northwest Pipeline Corp.  
P. O. Box 1526  
Salt Lake City, Utah 84402

Dear Mr. Gililand:

Enclosed are the followings logs you requested this date:

1. Marathon Oil Navajo #1, Permit #274  
Dual Induction-Laterolog & Sonic Log-Gamma Ray
2. Cities Service Monsanto Navajo #1, Permit #559  
Perforating Depth Control, Borehole Compensated  
Sonic Log-Gamma Ray, Sidewall Neutron Porosity Log,  
Proximity Log-Microlog and Dual Induction-Laterolog
3. Cities Service Monsanto #1, Permit #581  
Borehole Compensated Sonic Log-Gamma Ray  
Sidewall Neutron Porosity Log

You are free to make copies of these logs as you wish. Please  
return them as soon as possible.

Also see attached invoice for reproduction costs on the miscellaneous  
data sheets enclosed.

Very truly yours,

Mrs. Rhema Brandt  
Secretary to W. E. Allen  
Director, Enforcement Section

/rlb

Encs.

*Log returned 3-17-75*



OFFICE OF

**Oil and Gas Conservation Commission**

STATE OF ARIZONA

4515 NORTH 7TH AVE.  
PHOENIX, ARIZONA 85013

PHONE: (602) 271-5161

DATE: November 14, 1974

TO: All American Fuels Wells  
Apache County

FROM: W. E. Allen, Director  
Enforcement Section

Talked with Robert Schreiber, Navajo Tribe, today regarding the above referenced wells. The leases have expired on all but one well, I think it is the Navajo #B-1, SE/SW Section 9-T40N-R29E. The Tribe has taken over all wells except the one with the unexpired lease, including the two drilled by Cities Service.

The final disposition of these wells are under consideration by the Tribe. They may try to produce some wells themselves or may offer some or all for sale to the highest bidder. Supposedly they will notify this office of their ultimate decision. In the meantime our hands are tied. We can do nothing except hold unto the cash bond posted by American Fuels.

October 24, 1974

Memo from W. E. Allen, Director  
Enforcement Section

Memo to the following files:

Cities Service Monsanto 1-A Navajo  
Sec 21-T40N-R29E, Apache Co., #559

American Fuels Navajo B-1  
Sec 9-T40N-R29E, Apache Co., #608

American Fuels Navajo C-1  
Sec 6-T40N-R29E, Apache Co., #610

American Fuels Navajo E-1  
Sec 31-T41N-R28E, Apache Co., #613

Cities Service Monsanto C-1 Navajo  
Sec 16-T40N-R29E, Apache Co., #581

American Fuels Navajo M-1  
Sec 16-T41N-R30E, Apache Co., #609

American Fuels Navajo O-1  
Sec 3-T36N-R28E, Apache Co., #612

American Fuels Navajo AC-1  
Sec 17-T40N-R29E, Apache Co., #615

On this date I contacted Thomas Lynch, Minerals Supervisor, Bureau of Indian Affairs, Window Rock, Arizona, regarding the wells drilled on the Reservation by American Fuels. Mr. Lynch informed me that all the leases on which American Fuels had drilled holes had reverted to the Navajo Tribe. The Tribe is considering leaving the wells in their present shut-in status and offering them for sale to the highest bidder. A final decision has not been made at this time.

Mr. Lynch also said that the Tribe was considering the pros and cons of producing the two Cities Service wells or offering them for sale.

Mr. Lynch requested that this office not bring any action against American Fuels for the time being. He will keep us informed of any decision or action taken by the Tribe.

September 17, 1974

Memo from W. E. Allen, Director  
Enforcement Section

Memo to files:

Cities Service Monsanto 1 Navajo A  
Sec 21-T40N-R29E  
Apache County, Permit #559

Cities Service Monsanto 1 Navajo -C  
Sec 16-T40N-R29E  
Apache County, Permit #581

Ted Boston with the Land Department of Cities Service informed me during telephone conversations on the 9th and 16th that ownership of the above referenced wells had apparently reverted to the Navajo Tribe. Approximately one year ago Cities Service assigned and sold these two wells to American Fuels. American Fuels was never able to produce the wells or never made an effort to produce the wells and the lease on these wells expired thereby allowing the Tribe to assume ownership.



OFFICE OF  
Oil and Gas Conservation Commission

STATE OF ARIZONA  
4515 NORTH 7TH AVE.  
PHOENIX, ARIZONA 85013  
PHONE: (602) 271 5151

April 1, 1974

Mr. C. R. Robinson  
American Fuels Corporation  
2921 Carlisle Blvd., N.E., Suite 200  
Albuquerque, New Mexico 87110

Re: Cities Service Monsanto 1-A Navajo  
Sec 21-T40N-R29E  
Apache County, Permit #559

Cities Service Monsanto C-1 Navajo  
Sec 16-T40N-R29E  
Apache County, Permit #581

Dear Mr. Robinson:

The above referenced wells at your request are being placed under your \$25,000 cash blanket bond.

To avoid confusion regarding the wells now covered by your \$25,000 bond, we are listing the following wells that this Commission shows to be under this bond. If the following inventory of wells agrees with your list, please sign and return one copy to this Commission.

Cities Service Monsanto 1-A Navajo  
Sec 21-T40N-R29E, Apache Co., #559

Cities Service Monsanto C-1 Navajo  
Sec 16-T40N-R29E, Apache Co., #581

American Fuels Navajo B-1  
Sec 9-T40N-R29E, Apache Co., #608

American Fuels Navajo M-1  
Sec 16-T41N-R30E, Apache Co., #609

American Fuels Navajo C-1  
Sec 6-T40N-R29E, Apache Co., #610

American Fuels Navajo O-1  
Sec 3-T36N-R28E, Apache Co., #612

American Fuels Navajo E-1  
Sec 31-T41N-R28E, Apache Co., #613

American Fuels Navajo AC-1  
Sec 17-T40N-R29E, Apache Co., #615

American Fuels Navajo B-2  
Sec 10-T40N-R29E, Apache, #621

Very truly yours,

*W. E. Allen*  
W. E. Allen, Director  
Enforcement Section

WEA/r1b

APPROVED

By *[Signature]*

Date *April 12, 1974*

RECEIVED

MAY 10 1974

O & G COMM. DIV.



April 30, 1974

Mr. C. R. Robinson  
American Fuels Corporation  
2917 Carlisle Blvd., N.E.  
Albuquerque, New Mexico 87110

Re: Cities Service Monsanto 1-A Navajo	Cities Service Monsanto C-1 Navajo
Sec 21-T40N-R29E	Sec 16-T40N-R29E
Apache County, Permit #559	Apache County, Permit #581

Dear Mr. Robinson:

Your letter to this Commission dated March 26, 1974 requested the above referenced wells to be placed under your bond. In our reply to this request dated April 1, 1974, we requested that you sign and return to this Commission one copy of this letter to insure that your records were in agreement with ours. As of this date we have not received the signed copies.

Until we receive your approval of the number of wells that American Fuels presently has under bond, we cannot release Cities Service from their bonding obligations.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEA/rlb



OFFICE OF  
**Oil and Gas Conservation Commission**  
STATE OF ARIZONA  
4515 NORTH 7TH AVE.  
PHOENIX, ARIZONA 85013  
PHONE: (602) 271-5161

April 1, 1974

Mr. C. R. Robinson  
American Fuels Corporation  
2917 Carlisle Blvd., N.E.  
Albuquerque, New Mexico 87110

Re: Cities Service Monsanto 1-A Navajo      Cities Service Monsanto C-1 Navajo  
     Sec 21-T40N-R29E                              Sec 16-T40N-R29E  
     Apache County, Permit #559                  Apache County, Permit #581

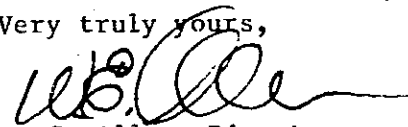
Dear Mr. Robinson:

The above referenced wells at your request are being placed under your \$25,000 cash blanket bond.

To avoid confusion regarding the wells now covered by your \$25,000 bond, we are listing the following wells that this Commission shows to be under this bond. If the following inventory of wells agrees with your list, please sign and return one copy to this Commission.

Cities Service Monsanto 1-A Navajo Sec 21-T40N-R29E, Apache Co., #559	Cities Service Monsanto C-1 Navajo Sec 16-T40N-R29E, Apache Co., #581
American Fuels Navajo B-1 Sec 9-T40N-R29E, Apache Co., #608	American Fuels Navajo M-1 Sec 16-T41N-R30E, Apache Co., #609
American Fuels Navajo C-1 Sec 6-T40N-R29E, Apache Co., #610	American Fuels Navajo O-1 Sec 3-T36N-R28E, Apache Co., #612
American Fuels Navajo E-1 Sec 31-T41N-R28E, Apache Co., #613	American Fuels Navajo AC-1 Sec 17-T40N-R29E, Apache Co., #615
American Fuels Navajo B-2 Sec 10-T40N-R29E, Apache, #621	

Very truly yours,

  
W. E. Allen, Director  
Enforcement Section

WEA/r1b

# American Fuels Corporation

TELEPHONES  
(505) 345-3507  
(505) 345-5518

SUITE 200  
2921 CARLISLE BOULEVARD, N. E.  
ALBUQUERQUE, NEW MEXICO 87110

March 26, 1974

Oil and Gas Conservation Commission  
State of Arizona  
4515 North 7th Avenue  
Phoenix, Arizona 85013

Attention: Mr. W. E. Allen, Director  
Enforcement Section

Re: Cities Service-Monsanto #1-A Navajo  
Section 21-T40N-R29E  
Apache County  
Permit No. 559

Cities Service-Monsanto #1-C Navajo  
Section 16-T40N-R29E  
Apache County  
Permit No. 581

Dear Sir:

We request that the above referenced wells be placed under our bond, thereby releasing Cities Service from their obligations.

If there are any questions, please contact us at the above address.

Very truly yours,

*Barbara Cunningham*

Barbara Cunningham  
Secretary to C. R. Robinson

BAC/s

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MAR 29 1974

O & G COM

September 24, 1973

American Fuels Corporation  
2917 Carlisle Blvd., N.E.  
Albuquerque, New Mexico 87110

Re: Cities Service Monsanto #1-a Navajo  
Section 21-T40N-R29E  
Apache County  
Permit No. 559

Cities Service Monsanto #C-1 Navajo  
Section 16-T40N-R29E  
Apache County  
Permit No. 581

Attention: Ms. Nita I. Macaw

Gentlemen:

You have previously advised this Commission that you have assumed ownership and operation of the above referenced wells. Will you please indicate to this Commission your willingness for these wells to be covered under your existing bond.

Your letter indicating your acceptance of these wells under your existing bond should list the wells by name and legal description. This information is necessary before the Commission can release Cities Service from their bonding obligations.

Thank you for your cooperation.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEA/r1b

CITIES SERVICE OIL COMPANY



Cities Service Building  
Box 300  
Tulsa, Oklahoma 74102

September 19, 1973

Oil and Gas Conservation Commission  
State of Arizona  
4515 North 7th Avenue  
Phoenix, Arizona 85013

Attention Mr. W. E. Allen, Director  
Enforcement Section

Re: Cities Service Monsanto #1-A Navajo  
Section 21-T40N-R29E  
Apache County, Arizona  
Permit No. 559

Cities Service Monsanto #C-1 Navajo  
Section 16-T40N-R29E  
Apache County, Arizona  
Permit No. 581

Gentlemen:

In reference to your letter of September 4, 1973, please be advised that Cities Service Oil Company and Monsanto Company assigned and sold the subject leases and wells to American Fuels Corporation. The assignment was dated May 18, 1973 and delivered to American Fuels Corporation on June 14, 1973. The address of the purchaser and the locations of the wells are as follows:

American Fuels Corporation  
2921 Carlisle Boulevard, N.E.  
Albuquerque, New Mexico 87110

Cities Service Monsanto #1-A Navajo Well  
located 1,980' FNL and 1,050' FEL of Section 21,  
Township 40 North, Range 29 East, G.S.R.M.,  
Apache County, Arizona;

and

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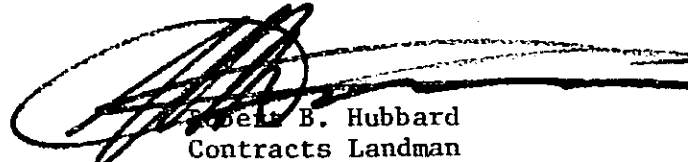
SEP 24 1973

Oil and Gas Conservation Commission  
State of Arizona  
September 19, 1973  
Page Two

Cities Service Monsanto #C-1 Navajo Well  
located 2,350' FNL and 2,290' FWL of Section 16,  
Township 40 North, Range 29 East, G.S.R.M.,  
Apache County, Arizona

Yours very truly,

CITIES SERVICE OIL COMPANY



Robert B. Hubbard  
Contracts Landman

RBH/tmb

cc: Mr. C. Robert Crawford

American Fuels Corporation  
2921 Carlisle Boulevard, N.E.  
Albuquerque, New Mexico 87110  
Attn: Mr. E. M. Riebold

Monsanto Company  
317 First Savings & Loan Building  
Midland, Texas 79701  
Attn: Mr. V. M. Basil

September 4, 1973

Mr. C. Robert Crawford  
Cities Service Oil Company  
800 Vaughn Building  
Midland, Texas 79701

Re: Cities Service Monsanto #1-A Navajo  
Sec 21-T40N-R29E  
Apache County  
Permit No. 559

Cities Service Monsanto #C-1 Navajo  
Sec 16-T40N-R29E  
Apache County  
Permit No. 581

Dear Mr. Crawford:

We are aware that Cities Service no longer is the operator of the above referenced wells, however, we have received no notification from Cities Service that the leases involved have been assigned to American Fuels. Therefore, according to our records, Cities Service is still the operator responsible to the State of Arizona.

Will you please submit a copy of the assignment of the leases from Cities Service to American Fuels or a letter advising this Commission of the assignment in order that we may keep our records square.

We are enclosing a copy of the Arizona Revised Statutes that pertain to the change of ownership.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEA/rlb

Enc.



CITIES SERVICE OIL COMPANY

800 Vaughn Building  
Midland, Texas 79701  
Telephone: 915 684-7131  
August 7, 1973

Oil and Gas Conservation Commission  
State of Arizona  
4515 North 7th Avenue  
Phoenix, Arizona 85013

Attention: Mr. W. E. Allen, Director  
Enforcement Section

Re: Cities Service Monsanto #1-A Navajo  
Sec 21-T40N-R29E  
Apache County  
Permit No. (559)

Cities Service Monsanto #C-1 Navajo  
Sec 16-T40N-R29E  
Apache County  
Permit No. 581

Gentlemen:

Reference is made to your letter of July 16, 1973, addressed to our Hobbs, New Mexico, office wherein you enclosed certain Designation of Operator forms for execution by Cities Service Oil Company. This is to advise that the captioned two wells and the leases upon which they are located have been assigned to American Fuels Corporation and, therefore, Cities is no longer the record title holder of these leases.

Please advise if further information is required.

Yours truly,

CITIES SERVICE OIL COMPANY

*C. Robert Crawford*  
C. Robert Crawford  
Landman

CRCbd

cc: American Fuels Corporation  
2921 Carlisle Blvd., NE  
Albuquerque, New Mexico 87110  
Attention: Mr. E. M. Ricbold

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AUG 10 1973

O & G CONRS. COMM.



July 16, 1973

Cities Service Company  
P. O. Box 69  
Hobbs, New Mexico 88240

Re: Cities Service Monsanto #1-A Navajo  
Sec 21-T40NMR29E  
Apache County  
Permit No. 559

Cities Service Monsanto #C-1 Navajo  
Sec 16-T40N-R29E  
Apache County  
Permit No. 581

Gentlemen:

We have been advised that the operations of the above referenced wells have been assigned to American Fuels Corporation.

Please complete the enclosed Designation of Operator forms and return one copy of this form for each well involved to this office.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEA/rlb

Enc.



OFFICE OF  
**Oil and Gas Conservation Commission**  
STATE OF ARIZONA  
4515 NORTH 7TH AVE.  
PHOENIX, ARIZONA 85013  
PHONE: (602) 271-5161

July 16, 1973

Mr. C. R. Robinson  
American Fuels Corporation  
2917 Carlisle Blvd. N.E.  
Albuquerque, New Mexico 87110

Re: Cities Service Monsanto #1-A Navajo  
Sec 21-T40N-R29E  
Apache County - Permit No. 559

Cities Service Monsanto #C-1 Navajo  
Sec 16-T40N-R29E  
Apache County - Permit No. 5-1

Dear Mr. Robinson:

We have received your notification advising this Commission that American Fuels is now the operator of the above referenced wells. We notice on your Sundry Notice and Reports on Wells that each well is indicated to be an oil well.

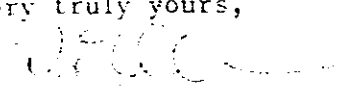
On the basis of the Potential Tests submitted by Cities Service, these wells are declared to be gas wells. The Cities Service Monsanto #1-A Navajo was drilled as an oil location and does not have proper spacing for a gas well, (See Rule 105, Paragraph B).

Before the Monsanto #1-A Navajo well can be produced, permission to produce this well must be secured from this Commission after Notice and Hearing.

Incidentally, the field in which these wells are located has been designated by Cities Service as the Black Rock (Pennsylvanian).

If you need additional information, please advise.

Very truly yours,

  
W. E. Allen, Director  
Enforcement Section

WEA/tlb

November 14, 1972

Mr. K. D. Van Horn  
Cities Service Oil Company  
P. O. Box 4906  
Midland, Texas 79701

Re: Monsanto #1-A Navajo, Permit #559  
Monsanto-Navajo C-1, Permit #581  
T-40N-R29E  
Apache County

Dear Mr. Van Horn:

Thank you for your suggested names for the field in which the above referenced wells are located. This Commission has named the field the Black Rock (Pennsylvanian) Field.

We hope this meets with your approval.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEA/r1b

*WBE*

CITIES SERVICE OIL COMPANY



Box 4906  
Midland, Texas 79701  
Telephone: 915 684-7131

November 3, 1972

Mr. W. E. Allen  
Oil and Gas Conservation Commission  
State of Arizona  
4515 N 7th Avenue  
Phoenix, Arizona 85013

Dear Mr. Allen:

Your letter of October 25, 1972 addressed to our Mr. Ed Wilder requested our recommendation for a field name to be assigned to our discovery well Monsanto Navajo #1 in Apache County, Arizona. Our three choices of names for this field listed in their preferential order are as follows:

1. Black Rock
2. Black Point
3. Carrizo

Yours very truly,

K. D. Van Horn  
Manager, Southwestern Region  
Production Division

KDV:REG:11

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NOV 10 1972  
O & G CONS. COMM.

October 25, 1972

Mr. Ed Wilder  
Cities Service Oil Company  
P. O. Box 69  
Hobbs, New Mexico 88240

Re: Monsanto #1-A Navajo, Permit 559  
Monsanto-Navajo C-1, Permit 581  
T-40N-R29E  
Apache County

Dear Mr. Wilder:

The above referenced No. 1-A Navajo is the discovery well in this field. In as much as this is a new field, the Commission desires to give a name to this field for identification purposes.

It would be appreciated if you would submit three choices of names. From this list of three, the Commission will pick one to officially apply to this field. Should you have no desire to assist in the naming of this field, the Commission will arbitrarily assign a name.

Your cooperation is appreciated.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEA/r1b

January 20, 1972

Mr. C. W. Spencer  
District Geologist  
Texaco Petroleum Products  
P. O. Box 6216  
Cherry Creek Station  
Denver, Colorado 80206

Dear Mr. Spencer:

In reply to your letter of January 17, 1972, requesting information on the Cities Service #1 Monsanto-Navajo "A" and the #1 Monsanto-Navajo "B", please be advised that both of these wells were drilled under confidential status. The Cities Service confidential period of #1 Monsanto A will terminate March 14, 1972. At this time, this office will be able to divulge any information that we may have.

In all probability if you would contact Mr. C. D. Robertson of

Cities Service Oil Company  
P. O. Box 69  
Hobbs, New Mexico 88240

that he will be able to furnish other information that you have requested.

Any information that the Commission is at liberty to give on other wells, will be furnished.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEA/rib

#559,566



Post Office Box 6216  
Cherry Creek Station  
Denver, Colo. 80206

January 17, 1972

Arizona Oil & Gas Commission  
4515 North 7 Avenue  
Phoenix, Arizona 85013

Gentlemen:

Has the Cities Service #1 Monsanto-Navajo "A", in Section 21-40N-29E, Apache County, been completed? Our records indicate this well reached total depth sometime in July, 1971. If the completion data on this well is available, we would appreciate having a copy of it.

Another Cities Service well, the #1 Monsanto-Navajo "B", in Section 27-40N-29E, was apparently spudded in October, 1971. It was scheduled as a 6100 foot test and it is possible that this well has reached total depth at this time. Any data you could give us on this well would also be appreciated.

Sincerely yours,

*C. W. Spencer*  
C. W. Spencer  
District Geologist

DUH:kjh

RECEIVED  
JAN 20 1972  
O & G CONS. COMM.

October 27, 1971

General Insurance Company of America  
4347 Brooklyn Avenue NE  
Seattle, Washington 98105

Re: Cities Service Oil Company  
Monsanto #1 Navajo  
SE/NE Section 21-T40N-R29E  
Apache County  
Our File #359

Re: Performance Bond #603388-136

Gentlemen:

The above referenced well is now covered under your bond #60338-165.  
Therefore, the Oil and Gas Conservation Commission of the State of  
Arizona authorizes cancellation of Bond #603388-136.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEA/rfb

cc: Mr. P. G. Schmidt  
cc: Cliff D. Robertson



**Operator** CITIES SERVICE OIL COMPANY

Bond Company	<u>GENERAL INSURANCE COMPANY OF AMERICA</u>	Amount	<u>\$5,000</u>
--------------	---	--------	----------------

Bond No. 603388-136 Date Approved 6-21-71

**Permits covered by this bond:**

559

559 - 60 3388 - 165

566 - 603388-165.

**CANCELLED**  
DATE 10-27-71

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS

Bond Serial No. 603388-136

That we: CITIES SERVICE OIL COMPANY

of the County of Tulsa in the State of Oklahoma

as principal, and GENERAL INSURANCE COMPANY OF AMERICA

of Seattle, Washington

AUTHORIZED TO DO BUSINESS WITHIN the State of Arizona.

as surety, are held and firmly bound unto the State of Arizona and the Oil and Gas Conservation Commission, hereinafter referred to as the "Commission", in the penal sum of Five Thousand and no/100 dollars (\$5,000.00) lawful money of the United States, for which payment, well and truly to be made, we bind ourselves, and each of us, and each of our heirs, executors, administrators or successors, and assigns jointly and severally, firmly by these presents.

The conditions of this obligation are that, whereas the above bounden principal proposes to drill a well or wells for oil, gas or stratigraphic purposes in and upon the following described land situated within the State, to-wit:

Section 21, Township 40 N, Range 29E, Apache County, Arizona

(May be used as blanket bond or for single well)

NOW, THEREFORE, if the above bounden principal shall comply with all the provisions of the Laws of this State and the rules, regulations and orders of the Commission, especially with reference to the requirements of A.R.S. §27-516, providing for the proper drilling, casing and plugging of said well or wells, and filing with the Oil and Gas Conservation Commission all notices and records required by said Commission, then in the event said well or wells do not produce oil or gas in commercial quantities, or cease to produce oil or gas in commercial quantities, this obligation is void; otherwise it shall remain in full force and effect.

Whenever the principal shall be, and declared by the Oil and Gas Conservation Commission in violation of the Laws of this State and the rules, regulations and orders of the Commission, the surety shall promptly:

1. Remedy the violation by its own efforts, or
2. Obtain a bid or bids for submission to the Commission to remedy the violation, and upon determination by the Commission and the Surety of the lowest responsible bidder, arrange for a contract between such bidder and the Commission, and make available as work progresses sufficient funds to pay the cost of remedying the violation; but not exceeding, including other costs and damages for which the surety may be liable hereunder, the amount set forth in the first paragraph hereof.

Liability under this bond may not be terminated without written permission of this Commission.

WITNESS our hands and seals, this 10th day of June, 1971

ATTEST:

CITIES SERVICE OIL COMPANY

R. E. Killackey, Asst. Sec.

T. H. Rubey, Manager-Ins. Principal

WITNESS our hands and seals this 10th day of June, 1971

GENERAL INSURANCE COMPANY OF AMERICA

By: Richard J. Kelly, Attorney-in-Fact  
Gilbert Katt, Surety, Resident Arizona Agent  
If issued in a state other than Arizona)

(If the principal is a corporation, the bond should be executed by its duly authorized officers, with the seal of the corporation affixed. When principal or surety executes this bond by agent, power of attorney or other evidence of authority must accompany the bond.)

Approved Date: 6-21-71  
STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION  
By: [Signature]

Permit No. 559

STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION  
Bond RECEIVED  
Form No. 2  
File Two Copies  
JUN 21 1971

O & G CONS. COMM.



GENERAL INSURANCE COMPANY OF AMERICA  
Home Office 17 Brooklyn Ave. N.E., Seattle, Washington 98105

LIMITED POWER OF ATTORNEY

No. 3112

KNOW ALL MEN BY THESE PRESENTS:

That General Insurance Company of America, a Washington corporation, does hereby appoint

-----FREDERICK G. SCHMIDT &/or RICHARD J. KELLY, Tulsa, Oklahoma-----

its true and lawful attorney(s)-in-fact, with full authority to execute on behalf of the company fidelity and surety bonds or undertakings and other documents of a similar character issued by the company in the course of its business, and to bind General Insurance Company of America thereby as fully as if such instruments had been duly executed by its regularly

elected officers at its home office, in amounts or penalties not exceeding the sum of \_\_\_\_\_

FIVE HUNDRED THOUSAND AND NO/100----- DOLLARS ( \$ 500,000.00 )

IN WITNESS WHEREOF, General Insurance Company of America has executed and attested these presents

this 24 day of February, 1971

*W. D. Hammersla*  
W. D. HAMMERSLA, SECRETARY

*Gordon H. Sweany*  
GORDON H. SWEANY, PRESIDENT

CERTIFICATE

Extract from the By-Laws of General Insurance Company of America:

"Article VI, Section 12. - FIDELITY AND SURETY BONDS ... the President, any Vice President, and the Secretary shall each have authority to appoint individuals as attorneys-in-fact or under other appropriate titles with authority to execute on behalf of the company fidelity and surety bonds and other documents of similar character issued by the company in the course of its business ... On any instrument making or evidencing such appointment, the signatures may be affixed by facsimile. On any instrument conferring such authority or on any bond or undertaking of the company, the seal, or a facsimile thereof, may be impressed or affixed or in any other manner reproduced; provided, however, that the seal shall not be necessary to the validity of any such instrument or undertaking."

Extract from a Resolution of the Board of Directors of  
General Insurance Company of America adopted July 28, 1970

"On any certificate executed by the Secretary or an assistant secretary of the Company setting out

- (i) The provisions of Article VI, Section 12 of the By-Laws, and
  - (ii) A copy of the power-of-attorney appointment, executed pursuant thereto, and
  - (iii) Certifying that said power-of-attorney appointment is in full force and effect,
- the signature of the certifying officer may be by facsimile, and the seal of the Company may be a facsimile thereof."

I, W. D. Hammersla, Secretary of General Insurance Company of America, do hereby certify that the foregoing extracts of the By-Laws and of a Resolution of the Board of Directors of this corporation, and of a Power of Attorney issued pursuant thereto, are true and correct, and that both the By-Laws, the Resolution and the Power of Attorney are still in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the facsimile seal of said corporation

this 10th day of June, 1971.



RECEIVED

JUN 21 1971

*W. D. Hammersla*  
W. D. HAMMERSLA, SECRETARY

CITIES SERVICE OIL COMPANY

Certified Copy of Directors' Resolutions

"RESOLVED, that the President, Vice President-Finance, the Treasurer, or the Manager, Insurance Department, be and they hereby are authorized and empowered in the name of and on behalf of this Corporation to sign or execute insurance proofs of loss, including subrogation agreements or loan releases, releases in settlement of claims for loss of and damage to property of this Corporation for amounts not in excess of twenty-five thousand dollars (\$25,000), surety bonds, and their application and/or indemnity agreements, and to furnish letters evidencing the existence of company insurance coverage; and be it further

RESOLVED, that the Property Claims Supervisor, Insurance Department, be and he hereby is authorized and empowered, in the name of and on behalf of this corporation, to sign or execute insurance proofs of loss, including subrogation agreements, for losses not in excess of five thousand dollars (\$5,000), and sign or execute releases in settlement of claims for damages to property of this corporation for amounts not in excess of one thousand dollars (\$1,000); and be it further

RESOLVED, that the President or any Vice President be, and they hereby are, authorized and empowered in the name of and on behalf of this corporation to sign or execute releases in settlement of claims for loss of and damage to property of this corporation."

RECEIVED

JUN 21 1971

O & G CONS. COMM.

\*\*\*\*\*

I, W. O. BROWN, Secretary of CITIES SERVICE OIL COMPANY,

do hereby certify that the above and foregoing is a true and correct copy of resolutions regularly and unanimously adopted at a meeting of the Board of Directors of said corporation, duly called and held on the 18th day of March, 1971, at which said meeting a majority of the Directors was present and voted.

**CANCELLED**

DATE

10-27-71

W. O. Brown

Dated: June 10, 1971

CITIES SERVICE OIL COMPANY



Cities Service Building  
Box 300  
Tulsa, Oklahoma 74102

October 22, 1971

Office of Oil and Gas Conservation Commission  
State of Arizona  
4515 North 7th Avenue  
Phoenix, Arizona 85013

Gentlemen:

SUBJECT: Performance Bonds Nos. 603388-136  
& 603388-165

In response to your letter of October 14, 1971,  
to R. E. Groves, we now attach a Rider to Performance  
Bond #603388-165, which we understand, upon your approval,  
you will furnish us with a Release of Bond #603388-136,  
covering an individual well previously deleted.

We appreciate your cooperation .

Very truly yours,

F. G. Schmidt  
Insurance Analyst

FGS/mt

Attachment

cc: Mr. Virgil Tones, CSO Co., Tulsa, Okla.  
Alexander & Alexander, Inc., Tulsa, Okla.

RECEIVED  
OCT 26 1971  
O & G CONS. COMM.

GENERAL INSURANCE COMPANY OF AMERICA  
Home Office: 4347 Brooklyn Ave. N.E., Seattle, Washington 98105 (A Stock Insurance Company)



**CANCELLED**

SURETY RIDER

To be attached to and form a part of Bond No. 603388-165  
executed by Cities Service Oil Company, as  
Principal and by GENERAL INSURANCE COMPANY OF AMERICA, as Surety,  
in favor of State of Arizona and the Oil and Gas Conservation Commission, and effective as of 6th day of October, 1971.

In consideration of the mutual agreements herein contained the Principal and the Surety hereby consent to ~~changing~~  
including the previously drilled well located in the SE/4, NE/4 of Section 21, Township 40N, Range 29E, Apache County, Arizona covered by bond number 603388-136.

Nothing herein contained shall vary, alter or extend any provision or condition of this bond except as herein expressly stated. This rider is effective on the 22nd day of October 19 71.

ATTEST:

CITIES SERVICE OIL COMPANY  
Principal

W. D. Brown  
Secretary

By T. H. Rubey  
T. H. Rubey, Manager-Insurance Title

Accepted:

GENERAL INSURANCE COMPANY OF AMERICA

\_\_\_\_\_  
Obligee

By Frederick G. Schmidt  
Frederick G. Schmidt, Attorney-in-Fact

By \_\_\_\_\_  
Title

RECEIVED  
OCT 20 1971



OFFICE OF

**Oil and Gas Conservation Commission**

STATE OF ARIZONA

4515 NORTH 7TH AVE.  
PHOENIX, ARIZONA 85013

PHONE: (602) 271-5161

October 14, 1971

Mr. R. E. Groves  
Region Administrative Manager  
Cities Service Oil Company  
Box 4906  
Midland, Texas 79701

Re: Performance Bond #603388-136

Dear Mr. Groves:

Your blanket bond in the amount of \$25,000 has been received and also your request for release of the above referenced bond which covers your well located in the SE/4, NE/4 of Section-21-T-40N-R29E, Apache County, Arizona. Since the above described well was drilled prior to the issuance of Bond #603388-165 for \$25,000, it will be necessary for your bonding company to issue a rider to the blanket bond specifically covering the previously drilled well. As quickly as this rider is received we will release your Bond #603388-136 in the amount of \$5,000.

An approved copy of the blanket bond is enclosed for your records.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEA/rlb

Enc.

cc- Mr. C. D. Robertson

# 559

CITIES SERVICE OIL COMPANY



Box 4906  
Midland, Texas 79701  
Telephone: 915 684-7131

October 12, 1971

State of Arizona  
Oil and Gas Commission  
4515 North Seventh Avenue  
Phoenix, Arizona 85103

Attention: Mr. W. E. Allen, Director

Gentlemen:

Cities Service Oil Company filed a \$5,000 Performance Bond, (Serial No. 603388-136) in June, 1971 covering Section 21-T40N-R25E, Apache County, Arizona. Since additional drilling in the State of Arizona is anticipated, we are filing a \$25,000 Blanket Bond (Serial No. 603388-165) with your office. Upon receipt of this Blanket Bond, we request that you release and return the \$5,000 Single Performance Bond previously filed.

Yours very truly,

R. E. Groves  
Region Administrative Manager  
Southwestern Region  
Production Division

REG:dlp

RECEIVED

OCT 14 1971

O & G CONS. COMM.

#559



September 10, 1971

Cities Service Oil Company  
P. O. Box 69  
Hobbs, New Mexico 88240

Re: Cities Service Oil Company Monsanto 1-A  
Section 21-T40N-R29E (Navajo)  
Apache County  
Our File #559

ATTENTION: Mr. C. D. Robertson

Dear Cliff:

We have received your Sundry Notices and Reports on Wells, Four Point Back Pressure Test, and Well Completion or Recompletion Form and Logs on the above referenced well. Everything is in good order except we must have the Well Completion or Recompletion Report (Form 4) on our own form. A supply of which is enclosed.

Cliff, it would be appreciated if you could secure for us another copy of each of the logs that were run on this well.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEA/rlb

Enc.

September 9, 1971

Mr. E. F. Motter  
Cities Service Oil Company  
P. O. Box 4906  
Midland, Texas 79701  
File # 559

Dear Mr. Motter:

I learned yesterday that you hadn't received the copy of Rules and Regulations of the Oil and Gas Conservation Commission that you requested on August 30. We are indeed sorry for this delay, however, you may have received this booklet by now, since it together with a letter was mailed to you on August 30.

In the event that the information you requested has not yet reached your desk, you might refer to Section 25-516, Paragraph B, of the Arizona Revised Statutes for the information you requested pertaining to a hearing. Resident council is not required.

Again we are sorry for this delay. If we can be of any further assistance, please call on us.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEA/rlb

Enc.

August 30, 1971

Mr. E. F. Motter  
Cities Service Oil Company  
P. O. Box 4906  
Midland, Texas 79701

*file #559*

Dear Mr. Motter:

Enclosed is a copy of the Rules and Regulations of the Oil and Gas Conservation Commission. Section 27-516, Paragraph B, of the Arizona Revised Statutes refers to the Hearing.

Resident council is not required.

If we can be of any further assistance, please feel free to call upon us at any time.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEA/r1b

Enc.

August 24, 1971

Mr. E. Y. Wilder  
Cities Service Oil Company  
P. O. Box 69  
Hobbs, New Mexico 88240

Re: Cities Service Oil Company Monsanto 1-A Navajo  
1980 FNL & 1050 FEL  
Section 21-T40N-R29E  
Apache County  
Our File #559

Dear Mr. Wilder:

The above referenced well was originally drilled as an oil well with 80 acres designated to your particular well. Should this well be completed as a gas well, it will be necessary prior to producing this well, to request a hearing of the Commission for an unorthodox location. Please refer to Rule 105, Section B and C.

Should Cities Service have Section 22 T-40 N R29E under lease, this hearing should be a mere formality. Even though you do not own Section 22, it is of my opinion that securing permission for an unorthodox location will pose no problem.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEA/r1b

8-20-71  
#559

Mr. Brad Bennett  
Citrus Service, Farmington

Enclosed you will find the following forms necessary for completion of oil and gas wells.

1. Well Status Report and Gas-Oil Ratio Tests, Form No. 5.
2. Potential Test and Request for Allowable Oil Wells, Form No. 6.

Also later on you will need the following form:

1. Reservoir Pressure Report, Form No. 7.

WA



CITIES SERVICE OIL COMPANY

Box 4906  
Midland, Texas 79701  
Telephone: 915 684-7131

June 23, 1971

State of Arizona  
Oil and Gas Conservation Commission  
4515 North Seventh Avenue  
Phoenix, Arizona 85103

Attention: Mr. W. E. Allen, Director

Gentlemen:

Cities Service Oil Company made application for a drilling permit on the Monsanto-Navajo No. 1, located in Section 21, Township 40N, Range 29-E, Apache County, Arizona. It is believed all necessary papers have been filed with the exception of the organization report, which is being forwarded herewith.

Yours very truly,

R. E. Groves  
Region Administrative Manager  
Southwestern Region  
Production Division

REG:d1p

Attachment

cc: Mr. E. Y. Wilder  
Hobbs, New Mexico

RECEIVED

JUN 24 1971

O & G CONS. COMM.

June 21, 1971

Mr. Ed Wilder  
Cities Service Oil Company  
Box 69  
Hobbs, New Mexico 88240

Re: Cities Service Oil Company Monsanto #1-A Navajo  
SE/4 NE/4 Section 21-T40N-R29E  
Apache County  
Our File #559

Dear Mr. Wilder:

Enclosed please find Receipt No. 2893 covering the \$25 filing fee, an approved copy of your Application for Permit to Drill, an approved copy of the performance bond, and Permit to Drill No. 559.

Also enclosed are miscellaneous instruction sheets pertaining to samples and other requirements of this Commission.

Very truly yours,

W. E. Allen, Director  
Enforcement Section

WEL  
Enc.



CITIES SERVICE OIL COMPANY

Box 69  
Hobbs, New Mexico 88240  
Telephone: 505 EX 3-2177

June 18, 1971

Mr. W. E. Allen, Director  
State of Arizona  
Oil and Gas Conservation Commission  
4515 North 7th  
Phoenix, Arizona 85013

Dear Mr. Allen:

Attached for your records and information is a Performance Bond in the amount of \$5000 from Cities Service Oil Company. This bond is submitted in compliance with the Arizona rules and regulations to permit Cities Service to drill a well in Section 21, Township 40N, Range 29E, Apache County, Arizona. Also attached is a Power of Attorney form and a certified copy of the Directors' Resolutions.

Please advise if this is not sufficient data to permit Cities Service to drill the proposed location.

Sincerely yours,

CITIES SERVICE OIL COMPANY

C. L. Coffman  
District Engineer

CLC/ed

Attachments (2)

RECEIVED

JUN 21 1971

O & G CONS. COMM.



# ORGANIZATION REPORT

Full Name of the Company, Organization, or Individual  
CHUSKA ENERGY COMPANY

Post Office Address (Box or Street Address)

P.O. BOX 2118 FARMINGTON, NEW MEXICO 87499

Plan of Organization (State whether organization is a corporation, joint stock association, firm or partnership, or individual)

NEW MEXICO CORPORATION

Purpose of Organization (State type of business in which engaged)

OIL & GAS OPERATOR

If a reorganization, give name and address of previous organization.

If a foreign corporation, give (1) State where incorporated	(2) Name and post office address of state agent	(3) Date of permit to do business in state
NEW MEXICO	CT CORPORATION 811 DALLAS AVE. HOUSTON, TX 77002	JANUARY 16, 1988
Principal Officers or Partners (if partnership) NAME	TITLE	POST OFFICE ADDRESS
DONALD W. RAYMOND	CHAIRMAN/VICE PRESIDENT	1850 Mt. Diablo Blvd. Walnut Crk., CA. 94596
HARVEY V. RISIEN Jr.	PRESIDENT	1250 NE Loop 410, Ste 700 San Antonio, Tx. 78209
MARSHALL C. WATSON	VICE PRESIDENT	P.O. Box 2118 Farmington, NM 87499

DIRECTORS NAME

POST OFFICE ADDRESS

DONALD W. RAYMOND

1850 Mt. Diablo Blvd. Ste 640 Walnut Crk  
CA. 94596

HARVEY V. RISIEN Jr.

1250 NE Loop 410 Ste. 700 San Antonio, Tx

MARSHALL C. WATSON

P.O. Box 2118 Farmington, NM 87499

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Vice President of the CHUSKA ENERGY COMPANY (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature

13 SEPT. 88

Date

STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION

Organization Report  
File One Copy

Form No. 1

# ORGANIZATION REPORT

Full Name of the Company, Organization, or Individual

Harken Southwest Corporation

Post Office Address (Box or Street Address)

P. O. Drawer 612007, Dallas, TX 75261 -or- 2505 N. Hwy 360, Suite 800, Grand Prairie, TX

Plan of Organization (State whether organization is a corporation, joint stock association, firm or partnership, or individual)

75050

Corporation

Purpose of Organization (State type of business in which engaged)

Oil & Gas Exploration

If a reorganization, give name and address of previous organization.

Changed name from Chuska Energy Company

If a foreign corporation, give  
(1) State where incorporated

Nevada

(2) Name and post office address of state agent  
Corporation Service Co.  
530 South 4th Street  
Las Vegas, Nevada 89101

(3) Date of permit to do business in state

1980

Principal Officers or Partners (if partnership)  
NAME

Mike D. Faulkner

TITLE

Chairman of the Board  
Chief Executive Officer

POST OFFICE ADDRESS

P. O. Drawer 612007  
Dallas, TX 75261

Richard Schroeder

President  
Chief Operating Officer

" "

Bruce Huff

Senior Vice President  
Chief Financial Officer

" "

Larry Cummings

Vice President  
General Council

" "

DIRECTORS NAME

POST OFFICE ADDRESS

/ All of the above

P. O. Drawer 612007, Dallas, TX 75261

Don Raymond

P. O. Drawer 612007, Dallas, TX 75261

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Production Administrator of the Harken Southwest Corporation (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature Rachelle L. Montgomery

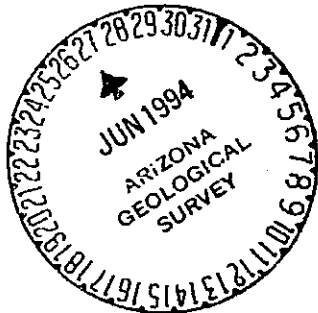
Date 6/24/94

Date

STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION

Organization Report  
File One Copy

Form No. 1



**OPERATOR'S CERTIFICATE OF COMPLIANCE AND AUTHORIZATION  
TO TRANSPORT OIL OR GAS FROM LEASE**

Federal, State or Indian Lease Number, or lessor's name if fee lease <b>NOG 8707-1139</b>	Field <b>Black Rock</b>	Reservoir <b>Paradox</b>
Survey or Sec-Twp-Rge <b>Section 16&amp;21-40N-29E</b>	County <b>Apache</b>	State <b>Arizona</b>
Operator <b>Harken Southwest Corporation</b>		
ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO:		
Street <b>5605 N. MacArthur Blvd. Suite</b>	City <b>400 Irving</b>	State <b>Texas 75038-2617</b>
Above named operator authorizes (name of transporter) <b>Giant Industries</b>		
Transporter's street address <b>5764 Hwy 64</b>	City <b>Farmington</b>	State <b>New Mexico 87401</b>
Field address		
Oil, condensate, gas, well gas, casinghead gas		
To transport <b>100</b>	% of the <b>Condensate</b>	from said lease.
OTHER GATHERERS TRANSPORTING FROM THIS LEASE ARE AS FOLLOWS:		
Name of gatherer <b>Western Gas</b>	% transported <b>100</b>	Product transported <b>Gas</b>
DATE		
Indicate whether or not this certificate is for a new lease. If not a new lease, indicate whether or not it is a change of operator, change of lease name, change of gatherer, or a consolidation or subdivision of leases and give effective date of change.		
Change of Condensate Purchaser (Black Rock #1 & #3)		

The undersigned certifies that the rules and regulations of the State of Arizona Oil & Gas Conservation Commission have been complied with in drilling and producing operations on this lease, except as noted above, and that the above transporter is authorized to transport the above specified percentage of the allowable oil or gas produced from the above described property, and that this authorization will be valid until further notice or until cancelled by the State of Arizona Oil & Gas Conservation Commission.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Production Administrator of the Harken Southwest Corporation (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date 11-29-95 Signature Lachelle Montgomery

Date approved: 11-30-95  
STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION

By: Steven L. Rainey

Permit No. 559



<b>STATE OF ARIZONA OIL &amp; GAS CONSERVATION COMMISSION</b> Operator's Certificate of Compliance & Authorization to Transport Oil or Gas from Lease File Two Copies Form No. 8
--

(Black Rock #1 & #3)

OPERATOR'S CERTIFICATE OF COMPLIANCE AND AUTHORIZATION TO TRANSPORT OIL OR GAS FROM LEASE		
Federal, State, or Indian Lease Number, or lessor's name if fee lease NOG 8707-1139	Field Black Rock	Reservoir Paradox
Survey or Sec-Twp-Rge Section 16&21-40N-29E	County Apache	State Arizona
Operator RIM Southwest Corporation		
ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO:		
Street 5 Inverness Drive East	City Englewood	State Colorado 80112
Above named operator authorizes (name of transporter) Giant Industries		
Transporter's street address 5764 Hwy 64	City Farmington	State New Mexico 87401
Field Address		
Oil, condensate, gas well gas, casinghead gas		
To transport	100 % of the	Condensate from said lease
OTHER GATHERERS TRANSPORTING FROM THIS LEASE ARE AS FOLLOWS:		
Name of gatherer	% transported	Product transported
Western Gas	100%	Gas
Indicate whether or not this certificate is for a new lease. If not a new lease, indicate whether or not it is a change of operator, change of lease name, change of gatherer, or a consolidation or subdivision of leases and give effective date of change.		
Harken Southwest Corporation changed its name to RIM Southwest Corporation See attached copy of Articles of Amendment to the Articles of Incorporation.		

The undersigned certifies that the rules and regulations of the State of Arizona Oil & Gas Conservation Commission have been complied with in drilling and producing operations on this lease, except as noted above, and that the above transporter is authorized to transport the above specified percentage of the allowable oil or gas produced from the above described property, and that this authorization will be valid until further notice or until cancelled by the State of Arizona Oil & Gas Conservation Commission.

CERTIFICATE: I the undersigned, under the penalty of perjury, state that I am the Vice President of the RIM Southwest Corporation (company), and that I am authorized by said company to make this report; that this report

was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date 1/26/01

Signature Rene Morin  
Rene Morin, Vice President

Date approved: 2-5-01

STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION  
By: Stewart L. Ranz

Permit No. 559,581

Mail two copies of completed form to:  
Oil & Gas Program Administrator  
Arizona Geological Survey  
416 W. Congress #100  
Tucson, AZ 85701-1315

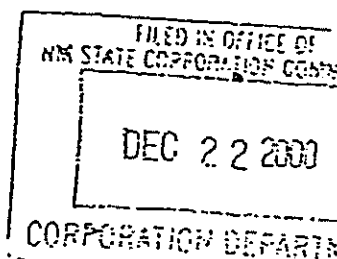


STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION  
Operator's Certificate of Compliance & Authorization to  
Transport Oil or Gas from Lease  
File Two Copies  
Form No. 8

TYPE OR PRINT LEGIBLY  
FILE DUPLICATE ORIGINALS  
FILING FEE: \$100.00

ARTICLES OF AMENDMENT  
TO THE  
ARTICLES OF INCORPORATION

3214384



Pursuant to the provisions of Section 53-13-4, NMSA 1978, the undersigned corporation adopts the following Articles of Amendment to its Articles of Incorporation:

ARTICLE ONE: (Note 1) The Corporate name and NMSCC# of the corporation is  
Harken Southwest Corporation ~~2000000~~ 1070770

ARTICLE TWO: (Note 2) The following amendment to the Articles of Incorporation was adopted by the Sole Shareholder of the corporation on December 21, 2000 in the manner prescribed by the New Mexico Business Corporation Act:  
(Insert amendment or attach exhibit, if needed - Indication should be given to reflect which article(s) number has been amended.)

ARTICLE ONE is amended and shall read as follows:

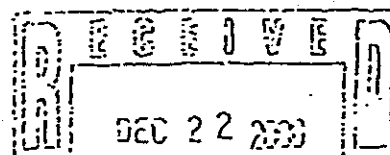
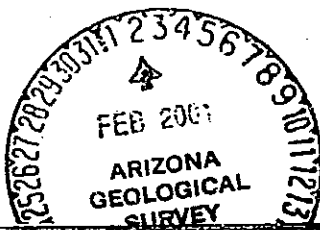
"The name of the corporation is RIM Southwest Corporation."

ARTICLE THREE: (Note 3) The number of shares of the corporation outstanding at the time of such adoption was 20,000 and the number of shares entitled to vote thereon was 20,000.

ARTICLE FOUR: (Note 4) The designation and number of outstanding shares of each class entitled to vote thereon as a class were as follows:

CLASS	NUMBER OF SHARES
One class only of Common Stock	20,000

ARTICLE FIVE: (Note 3) The number of shares voting for such amendment was 20,000 and the number of shares voting against such amendment was 0.



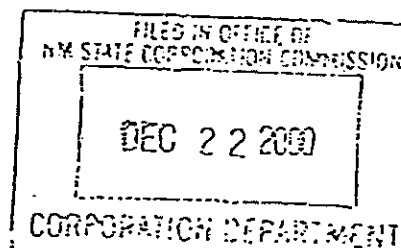
ARTICLE SIX: (Note 3) The number of shares of each class entitled to vote thereon as a class voted for and against such amendment, respectively, as follows:

CLASS	FOR	AGAINST
Common -- only one class	20,000	0

ARTICLE SEVEN: (Note 4) The manner, if not set forth in such amendment, which any exchange, reclassification, or cancellation of issued shares provided for in the amendment shall be affected, is as follows:

inapplicable

DATED: December 21, 2000



Harken Southwest Corporation  
(Note 1) CORPORATE NAME

BY: Stephen W. Rector  
(Note 5) Its President  
Stephen W. Rector

AND: Rene Marin  
(Note 5) Its Vice President  
Rene Marin

Under penalty of perjury, the undersigned declares that the foregoing document executed by the corporation and that the statements contained therein are true and correct to the best of my knowledge.

Harken Southwest Corporation

By: Stephen W. Rector  
(Note 5) (One of the above officers signs)  
Stephen W. Rector, President



RESOLUTION OF THE SOLE SHAREHOLDER  
OF  
HARKEN SOUTHWEST CORPORATION

A Special Meeting of the sole shareholder of HARKEN SOUTHWEST CORPORATION,  
( the "Corporation"), was held beginning at 3:30, Mountain Time, on Thursday December  
21, 2000, pursuant to which the sole shareholder consented to, voted in favor of and adopted the  
following resolution:

RESOLVED, that the Articles of Incorporation of the Corporation be amended in  
the form attached hereto by changing the name of the Corporation as follows:

ARTICLE I

NAME

The name of the corporation is RIM Southwest Corporation.

IN WITNESS WHEREOF, the undersigned has executed this written consent to be  
effective as of the 21 day of December 2000.

RIM SW HOLDING CORPORATION, a Colorado  
corporation

By: Stephen W. Rector  
Name: Stephen W. Rector  
Its: President



# ORGANIZATION REPORT

Full Name of the Company, Organization, or Individual  
**RIM SOUTHWEST CORPORATION (FORMERLY KNOWN AS HARKEN SOUTHWEST CORPORATION)**

Mailing Address and Phone Number  
**5 INVERNESS DRIVE EAST, ENGLEWOOD, COLORADO 80112 (303) 799-9828**

Plan of Organization (State whether organization is a corporation joint stock association, firm or partnership, or Individual)  
**Corporation**

Purpose of Organization (State type of business in which engaged)  
**Oil & Gas Production/Sales**

If a reorganization, give name and address of previous organization  
**N/A**

If a foreign corporation give (1) State where incorporated	(2) Name and mailing address of state agent	(3) Date of permit to do business in state
New Mexico	CT Corporation 322 S N. Central Avenue Phoenix, AZ 85012	1/16/88
Principal Officers or Partners (if partnership) NAME	TITLE	MAILING ADDRESS
V. A. Isaacs, Jr.	Chairman, Board of Directors	5 Inverness Drive East Englewood, CO 80112
Stephen W. Rector	President	5 Inverness Drive East Englewood, CO 80112
Rene' Morin	Vice President	5 Inverness Drive East Englewood, CO 80112
Robert L. Vesco	Vice President/Secretary/ Treasurer	5 Inverness Drive East Englewood, CO 80112
William J. Holcomb	Vice President	Post Office Box 2058 Farmington, NM 87499

DIRECTORS NAME	MAILING ADDRESS
V. A. Isaacs, Jr.	SAME AS ABOVE
Stephen W. Rector	" "
Rene' Morin	" "
Robert L. Vesco	" "
William J. Holcomb	" "

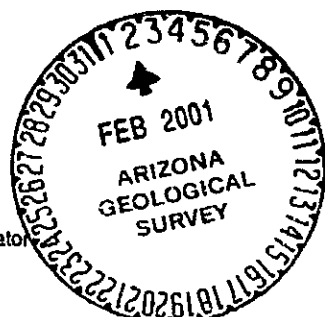
CERTIFICATE I, the undersigned, under the penalty of perjury state that I am the Secretary of the RIM Southwest Corporation (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

*Robert L. Vesco*  
 Signature Robert L. Vesco, Secretary

1/25/01

Date

Mail completed form to  
 Oil and Gas Program Administrator  
 Arizona Geological Survey  
 416 W Congress, #100  
 Tucson, AZ 85701



STATE OF ARIZONA  
 OIL & GAS CONSERVATION COMMISSION

Organization Report  
 File One Copy

Form No. 1